

Revenues

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A Great Story: Albuquerque

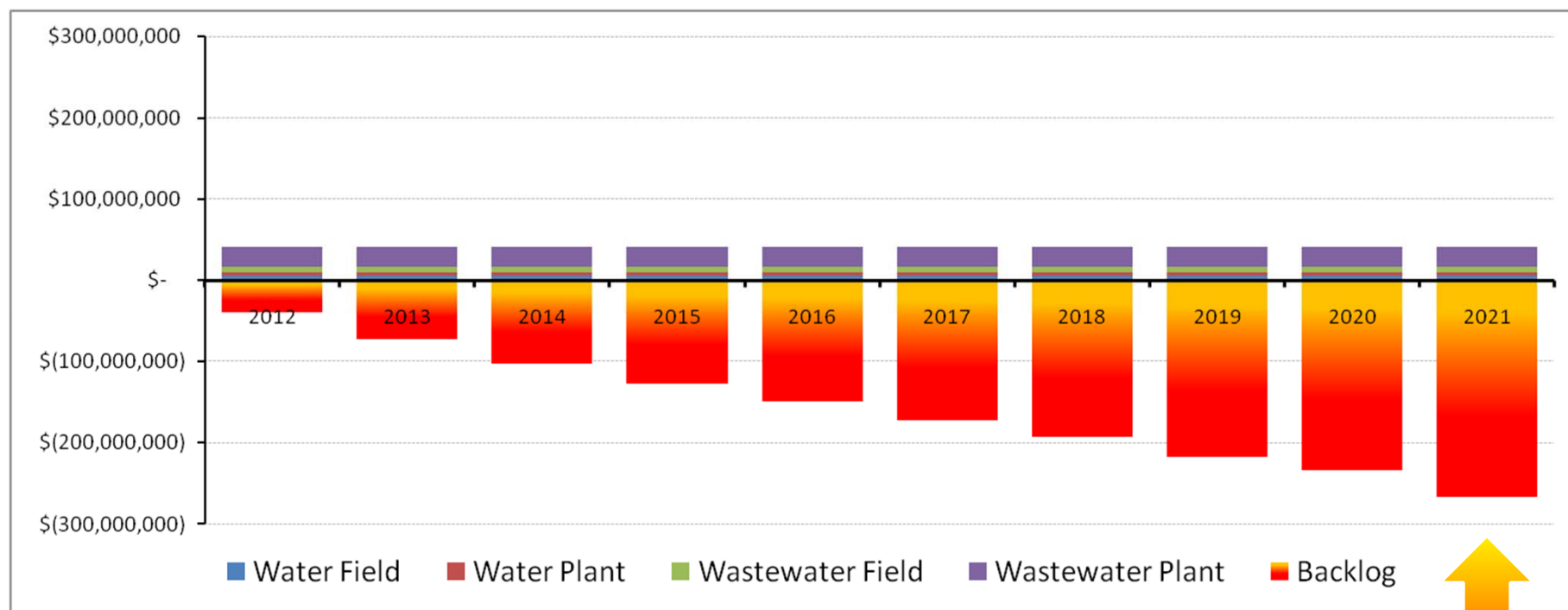


The Story Told

- The following slide was presented to the board
- Message was intended to be: “Things are bad”



Current \$41 Million CIP Spending with no change for the next 10 years



10 Year Analysis

\$267 M

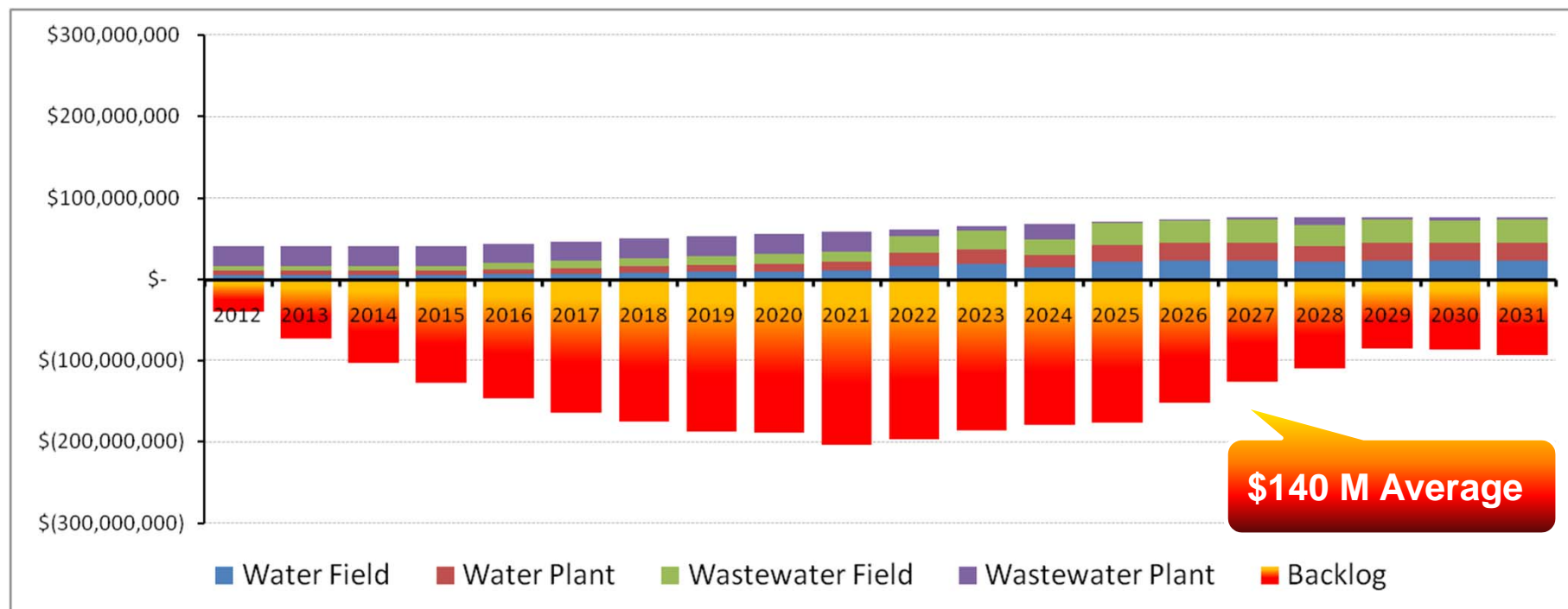
Did it work?

- Short answer is no
- What did they do?
- Defer rate increase



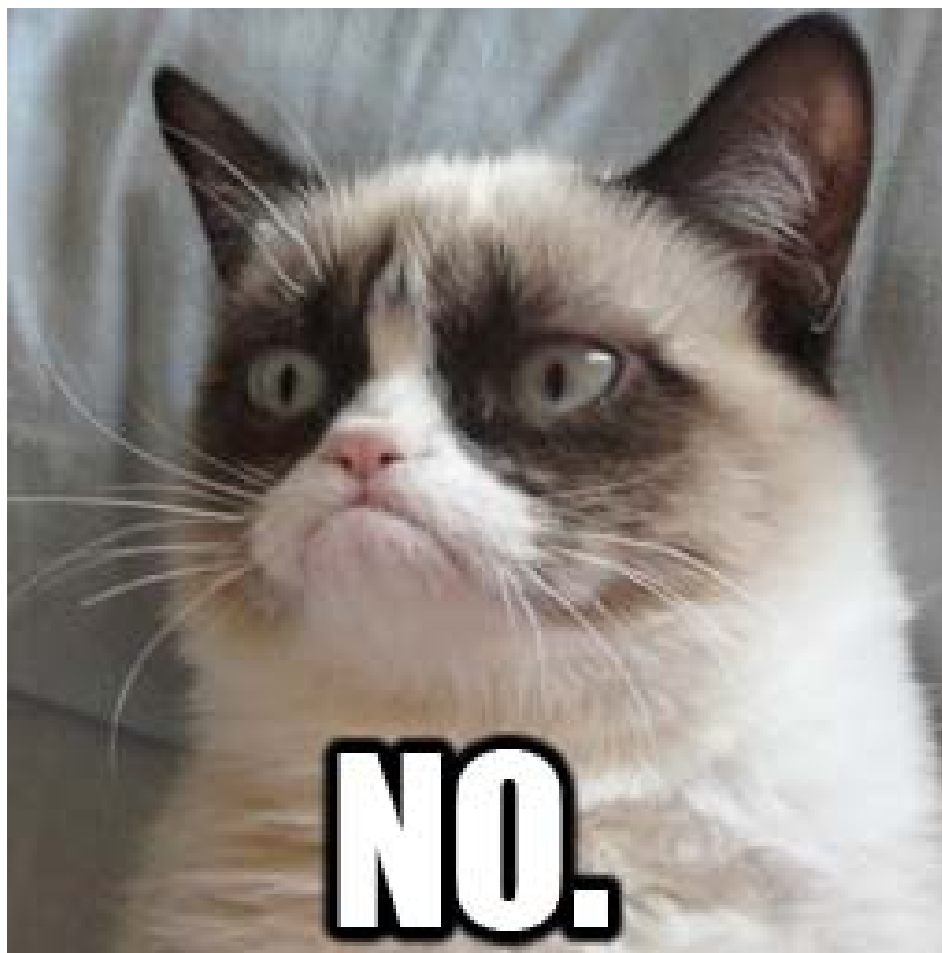
Decade Spending Plan to fund Level 1 & 2 Priorities

Starting 2017: Increase \$3 Million per year for next 10 years to reduce backlog



20 Year Analysis

Is that the end of the story?





ABQ Journal March 31, 2012

Water main break causes outages in NE Albuquerque

By Ashley Trevizo / Journal Staff Writer on Sat, Mar 31, 2012



POSTED AT: 3:37 pm

A break in a steel water main at Washington and Copper NE has left some residents in the area without water while repairs are made, David Morris, spokesman for Albuquerque Bernalillo County Water Utility Authority said.

The break occurred around 10 a.m. and shot a geyser, which at its climax reached 80 feet in the air. The break was caused by a hole in the pipe, which was likely related to the age of the pipeline, Morris said.

The geyser did cause damage to the Media Arts Collaborative Charter School.

Crews are currently working on repairing the break and water was turned off around 1 p.m. The repairs are expected to last into late this afternoon, Morris said.



ABQ Journal April 25, 2012

Road Closure in Southwest ABQ

By Rozanna M. Martinez / Journal Staff Writer on Wed, Apr 25, 2012



POSTED AT: 2:08 pm

Sunset Road SW will be closed at Jeanette Ave until Friday.

The closure is needed by the Albuquerque Bernalillo County Water Utility Authority (ABCWUA) for an emergency repair of a 24-inch sewer main that collapsed last night, according to a county news release. TLC Company Inc., will be making the repairs for ABCWUA.

The work zone also encompasses Hooper Road because of the unusual geometry of that intersection, the news release reads.

A detour route for Sunset Road will be from Sunset Gardens to Atrisco to Bridge Boulevard. There is local access right up to either side of the work zone, according to the news release.

Through traffic is advised to seek alternate routes.



ABQ Journal April 25, 2012

Editorial: Increase in Water Rates Needed for Maintenance

By [Albuquerque Journal Editorial Board](#) on Thu, Jun 21, 2012

Prevention is cheaper in the long run.

That's true whether it's getting your teeth cleaned twice a year, your vehicle serviced every 3,000 miles or maintaining the pipes that bring drinking water to your house. A broken water or sewer line is a real emergency residents expect to be fixed ASAP.

Albuquerque's water and sewer utility has reached the point where aging infrastructure — pipelines, treatment plants, pumping stations, etc. — is breaking down. More than 400 miles of metro area water and sewer pipe are at high risk of failure.

But lack of money has increased the backlog of pipes that should be replaced. It is estimated it will cost hundreds of millions of dollars over the next decade to replace the Albuquerque Bernalillo County Water Utility Authority's infrastructure. The utility also is in the midst of a \$250 million reconstruction of Albuquerque's primary sewage treatment plant.

Wednesday night, the utility's board approved moderate rate increases — 5 percent in 2015 and another 5 percent in 2017 — to upgrade the system. By 2017, the average residential customer's monthly bill would increase \$9, from \$45 to \$54.

The board already has approved two rate increases. One took effect last July. The second will take effect next year and will average 5 percent.

Utility officials say upgrading the system should lower operating costs because so much work now is devoted to repairing broken lines. The new rate increases also will provide money to increase the utility's reserve fund for emergencies.

The increases are intended to cover maintaining or replacing infrastructure, and not operating expenses.

With the rate increases and an ongoing replacement/maintenance plan in place, the utility estimates the backlog of infrastructure in need of repair or replacement could be cleared by 2027.

While no one likes higher utility bills, putting off the problem will just cost more in the long run. Albuquerque's water cost is moderate compared with other neighboring cities — high water users in Santa Fe pay more than double what their Duke City counterparts pay — and the upgrades need to be done.

The utility board did the right thing by biting the bullet now.



ABQ Journal April 25, 2012

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Utility officials say upgrading the system should include new lines. The new rate increases also will provide maintenance. The increases are intended to cover maintaining the system. With the rate increases and an ongoing replacement program, the need of repair or replacement could be cleared by 2017. While no one likes higher utility bills, putting off the upgrades is more moderate compared with other neighboring cities. The utility board did the right thing by biting the bullet now.

Wednesday night, the utility's board approved moderate rate increases — 5 percent in 2015 and another 5 percent in 2017 — to upgrade the system. By 2017, the average residential customer's monthly bill would increase \$9, from \$45 to \$54. The board already has approved two rate increases. One took effect last July. The second will take effect next year and will average 5 percent... **The utility board did the right thing by biting the bullet now.**



How could this have been handled?

- Up front, instead of “backlog”
 - We will have 5 major water breaks
 - We will have 10 sewer collapses
 - We will have 3 permit violations at the WWTP
 - We will have 2 well collapses
 - etc.



How are real events different from just money amounts?

- When money is small compared to overall valuation of system, may mask the issue
- Easier to ignore money than to ignore breaks, collapses, permit violations
- Elected officials/board members can't always translate money into real things without help; they're not always "water people"



Building Rate Capacity

- One other aspect of the story of ABCWUA
 - ABQ Journal ran numerous articles regarding water main breaks
 - Many high profile breaks were on the news
 - Were there more breaks?
 - Not really
 - More reports
 - Public ready to accept the need for rates



So.....

- Telling your story can help build rate capacity
- We need \$\$\$ because _____ and _____ and _____



Confidence in “Story”

- Water/WW utilities tend to be apologetic
 - “we’re sorry we have to raise your rates”
 - “you shouldn’t have to pay for water”
 - “water is so vital it should be cheap
- How about....
 - “we provide you a phenomenal service, you need to pay an appropriate amount to have that service”



© 2004 Ted Goff



“This part of the plan will be funded with all the unused money we must have laying around someplace.”



Session Objectives

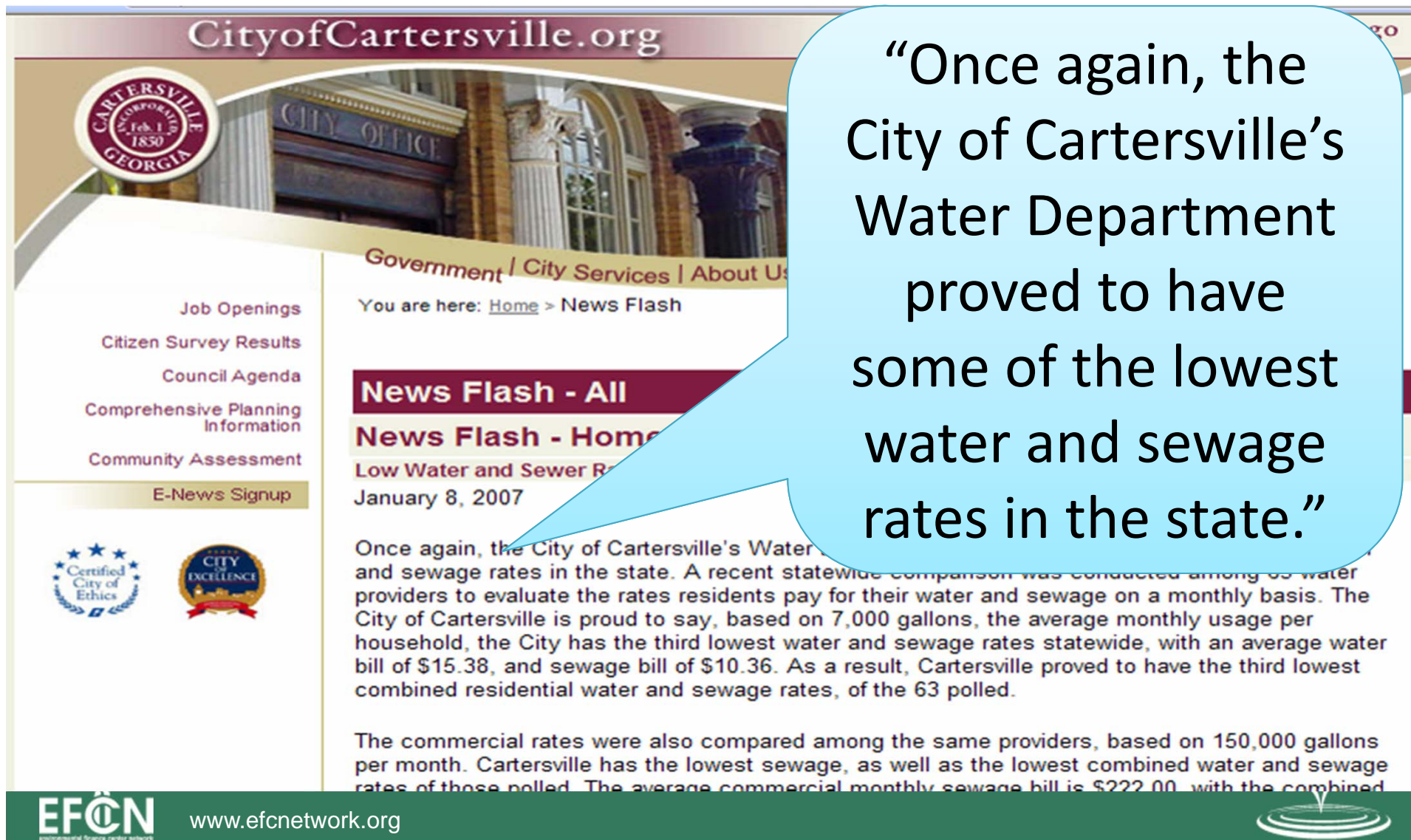
- Understand how to pay for the costs of running your water system
- Learn about the debt market
- Identify government programs that can help



How much money do you need?



Not This



The screenshot shows the City of Cartersville website. The header includes the URL "CityofCartersville.org" and a seal for "CARTERSVILLE INCORPORATED Feb. 1, 1850 GEORGIA". A navigation bar lists "Government | City Services | About Us". A sidebar on the left contains links for "Job Openings", "Citizen Survey Results", "Council Agenda", "Comprehensive Planning Information", "Community Assessment", and "E-News Signup". Below the sidebar are logos for "Certified City of Ethics" and "2007 CITY EXCELLENCE". The main content area features a "News Flash - All" section with a sub-header "News Flash - Home" and a title "Low Water and Sewer Rates". The date "January 8, 2007" is displayed. The text of the news flash states: "Once again, the City of Cartersville's 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 Cartersville 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, Cartersville proved to have the third lowest combined residential water and sewage rates, of the 63 polled." Below this, it mentions commercial rates: "The commercial rates were also compared among the same providers, based on 150,000 gallons per month. Cartersville has the lowest sewage, as well as the lowest combined water and sewage rates of those polled. The average commercial monthly sewage bill is \$222.00, with the combined". A large blue speech bubble with the text "Once again, the City of Cartersville's Water Department proved to have some of the lowest water and sewage rates in the state." is overlaid on the right side of the page.

CityofCartersville.org

CARTERSVILLE
INCORPORATED
Feb. 1, 1850
GEORGIA

Government | City Services | About Us

You are here: [Home](#) > News Flash

Job Openings
Citizen Survey Results
Council Agenda
Comprehensive Planning Information
Community Assessment
E-News Signup

Certified City of Ethics
2007 CITY EXCELLENCE

News Flash - All
News Flash - Home
Low Water and Sewer Rates
January 8, 2007

Once again, the City of Cartersville's 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 Cartersville 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, Cartersville proved to have the third lowest combined residential water and sewage rates, of the 63 polled.

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“Once again, the City of Cartersville's Water Department proved to have some of the lowest water and sewage rates in the state.”

EFcN
environmental finance center network
www.efcnetwork.org

“Full Cost Pricing”

- Operations & maintenance expenditures
- Taxes and accounting costs
- Contingencies for emergencies
- Principal and interest on long-term debt
- Reserves for capital improvement
- Source water protection
- Value (“opportunity costs”) of the water



Determining Financial Need

- Start with your current budgets. How have they changed over time? What is the cost per customer?
- Then include any known future expenses
- Remember inflation, changes in customer levels, etc.



Things to Watch Out For

- Do you have good detail on your O&M costs?
- Is your capital planning complete?
Realistic?
- What is your goal for your utility—think back to the four squares from earlier



Ways To Pay

- Pay as you go (current receipts)
- Save in advance and pay
- Pay later (someone loans you money)
- Grants (let someone else pay)



Grants Aren't Completely Free Money

- Application for the grant can be expensive – staff time and money
- Applications can take months to process
- Often lots of strings attached
- Often require a percentage match
- Lots of competition
- Difficult to sustain



Quick Thought on Grants

- This presentation is about ***sustainable*** program finance
- Grants are not sustainable finance



I Say This A Lot

“Grants are not sustainable finance”



Really, I Say This A Lot

NEWS

UNCF Green Building Institute Focuses on Helping Schools Find Funds, Save on Costs

by Jamaal Abdul-Alim , June 20, 2011

Categories:

Fellowships & Grants / Minority Serving Institutions / Minorities on Campus / Historically Black Colleges & Universities / Tribal College/Al Indian Serving / Federal & State Agencies / Deans & Directors /

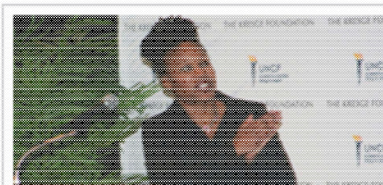
WASHINGTON, D.C. - To tap into federal money to make campus infrastructures more energy efficient, college and university leaders must be strategic, collaborative and pay close attention to details when submitting proposals.

At the same time, grants should not be seen as the only source of revenue for green projects, and campus leaders should search for creative ways to finance the projects, such as using the savings from retrofitted buildings to establish "green revolving funds" to upgrade other buildings.

Those were just a few of the tips that Obama administration officials and environmental and finance experts provided at the UNCF Building Green Learning Institute held late last week at the Hyatt Regency Washington on Capitol Hill.

The institute -- the fourth of its kind and the first one to be national in scope -- drew several hundred participants from an array of minority-serving institutions and various green organizations throughout the country.

Discussions ranged from the importance of recycling and having students lead recycling initiatives, to updates on green construction projects, such as such a



Environmental activist Majora Carter speaks at the UNCF Building Green Learning Institute in 2010. (photo courtesy of UNCF)


“Grants are not sustainable finance,” said Glenn Barnes

RELATED TOPICS

- » Symposium: N Intervention for African-Ar Boys
- » U.S., Foreign Education Ins Unite To Help
- » New Bill Targ College Acce Academic Sur Low-Income J
- » Michigan Two Four-Year Co



Really, A Lot



Here Lies
GLENN BARNES
Husband, Father,
Springsteen Fan
*“Grants are not
sustainable finance”*



The Main Source: Your Revenue

- Pay as you go (current receipts)
- Save in advance and pay
- Pay later (someone loans you money)
- ~~Grants (let someone else pay)~~



Rates & Monthly Charges

- What type of rates and monthly charges to you levy?
 - Charges based on metered usage?
 - Flat monthly charges?
 - Something else?
 - Nothing?



Jacksonville, GA

We charge a flat rate of \$15.00 monthly

P.O. - Box 133
Jacksonville GA 31544



We ARE A Small town we do NOT have Sewage



Other Places with a Fixed Rate

- Small town in New York state that charges \$120/year, billed in two \$60 installments
- Trailer park in Ohio that includes water in the monthly rent
- HUD-subsidized apartments in USVI that must include water in rent
- City of Chicago



The Reef Condos -- USVI

- Has residential units and commercial (shops and restaurants)
- Flat rate structure for residents
- Decreasing block for commercial
- Bulk rate for the next condo complex over

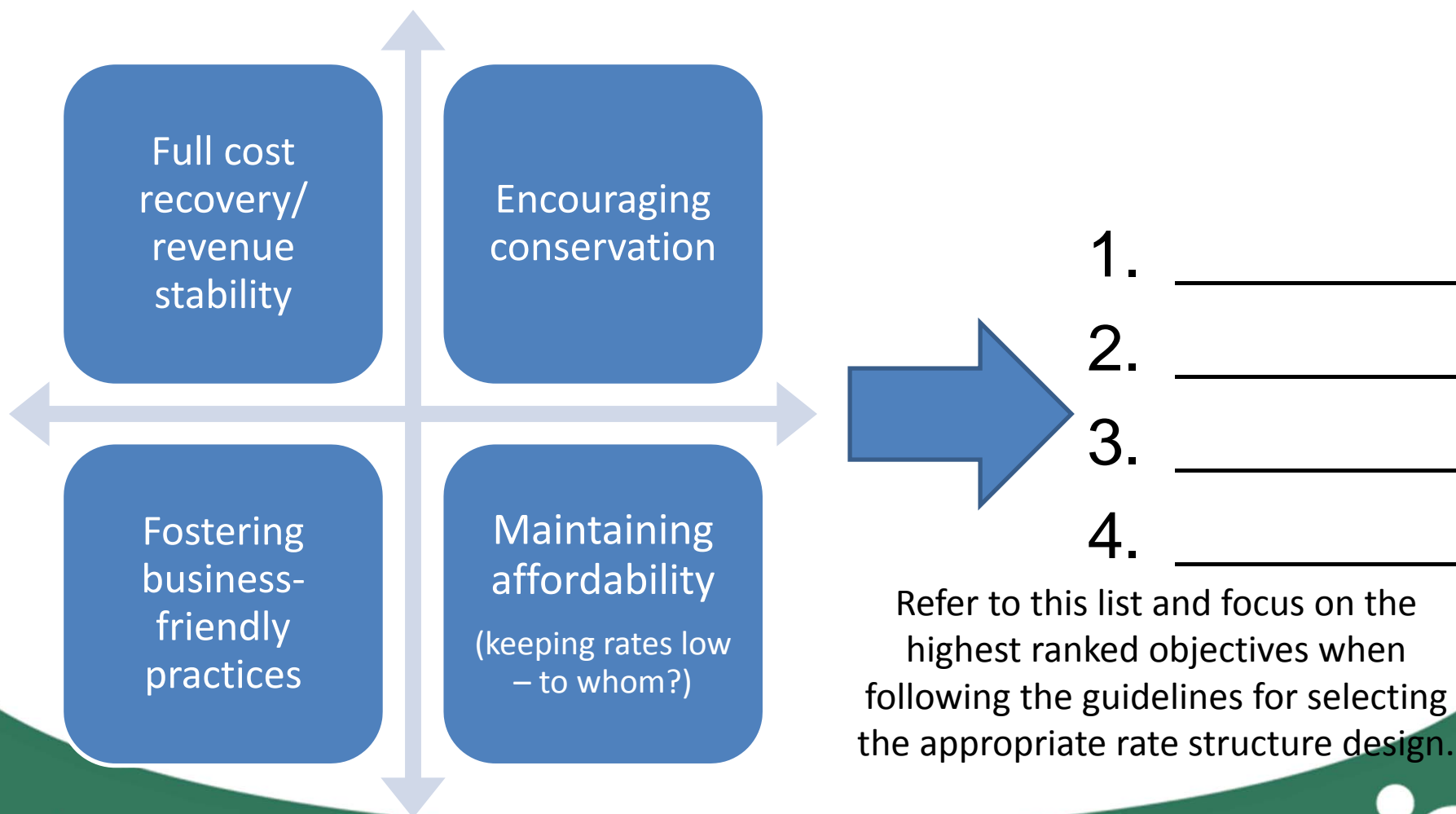


Other Places with Multi-Faceted Rate Structures

- Duty Free Saipan—fixed rate for shops included in rent, per gallon charge for Hard Rock Café
- Hyatt Saipan—billed as part of room charges and restaurant bills for visitors, included in rent for vendors, bulk sales agreement with American Memorial Park



Before You Begin: Rank Your Utility's Rate Setting Objectives



Refer to this list and focus on the highest ranked objectives when following the guidelines for selecting the appropriate rate structure design.



Elements of Rate Structure Designs

1. Customer classes/distinction
2. Billing period
3. Base charge
4. Consumption allowance included with base charge
5. Volumetric rate structure
6. (If applicable) Number of blocks, block sizes and rate differentials
7. (Optional) Temporal adjustments
8. Frequency of rate changes



Elements of Rate Structure Designs:

1. Customer Classes/Distinction

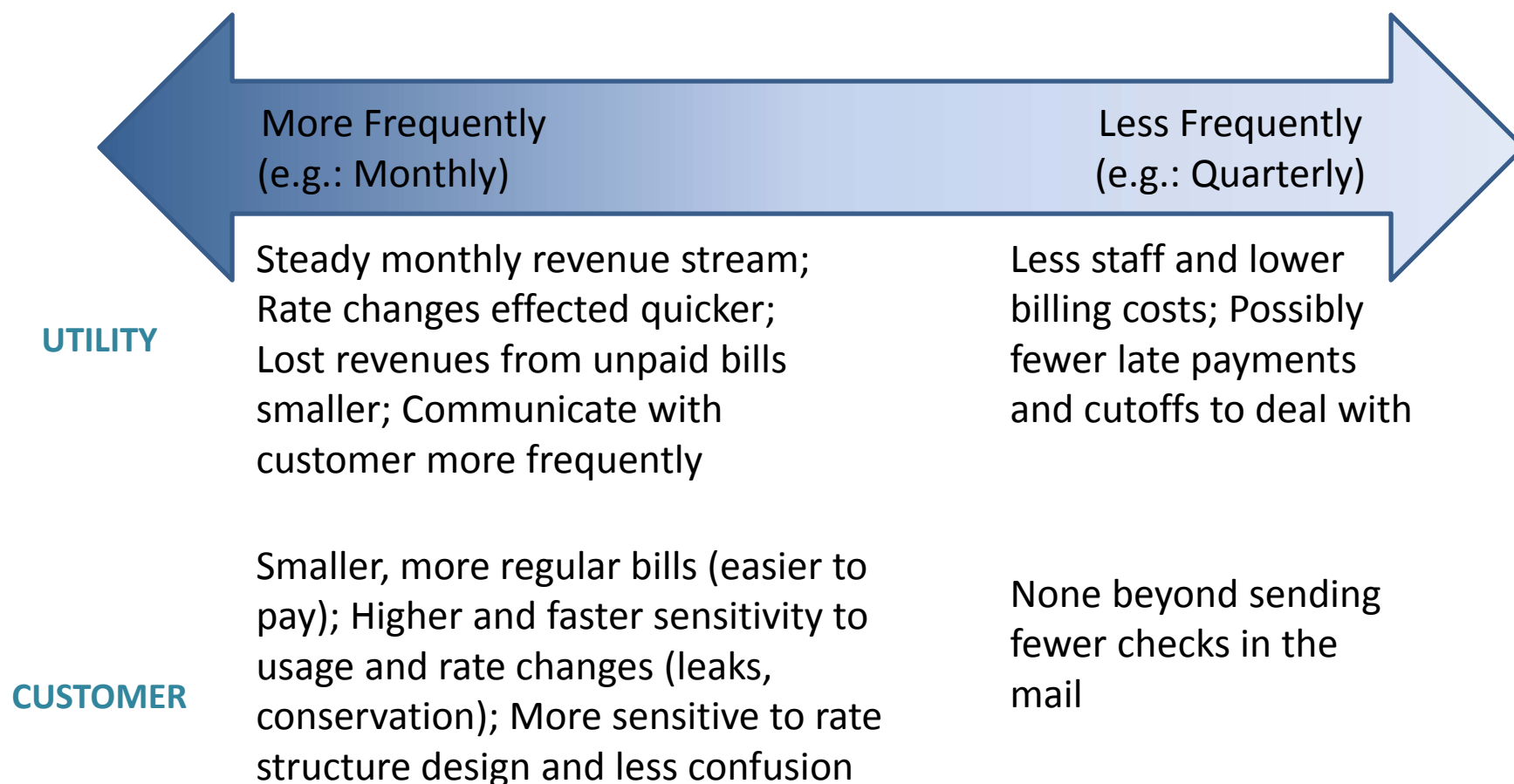
8/29/2013

Alternative	Targets
One rate structure for all	All are equal
Separate rate structure for residential, irrigation, commercial, industrial, governmental, or wholesale customers	Specific type of customer
One rate structure, but with different base charges based on meter size	Non-residential or multi-family housing
One rate structure for all, but with blocks that implicitly only target non-residential use	Non-residential
Negotiated rate structure with individual high-use customers (typically an industrial customer)	Only one customer
Different rates for customers outside municipal limits/service area boundaries	“Outside” customers



Elements of Rate Structure Designs:

2. Billing Period



Suggestion: Use a monthly billing period if you can afford it



Elements of Rate Structure Designs:

3. Base Charges

PROS

Higher “guaranteed” revenue to pay off the fixed costs;
Higher month-to-month revenue stability

Provides strong incentive to keep usage low;
Customers more likely to notice month-to-month change in bill due to change in usage

High
Base
Charge

Low
Base
Charge

CONS

Customers with very low usage are paying a high unit price;
Customers do not witness a significant change in bill if conserve water

Revenues less stable for utility;
Revenues are highly seasonal

Suggestion: Smaller utilities should lean towards higher base charges



Elements of Rate Structure Designs:

4. Consumption Allowance with Base Charge

8/29/2013

Bills and revenues are more sensitive to usage changes

Provides a lifeline amount of water to offset some of the effects of high base charges

Provides a greater offset for the customer, but discourages conservation

Do not include any (0 gallons)

Include some amount (e.g.: 1,000 GPM)

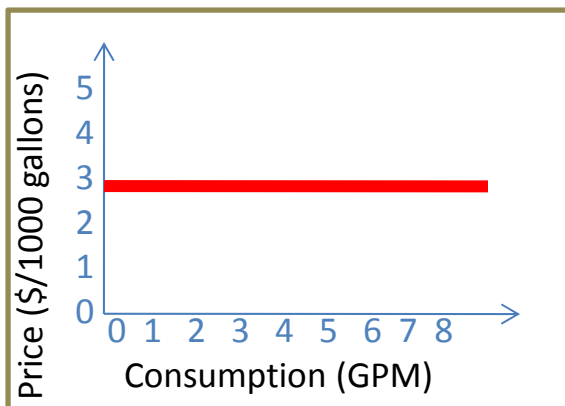
Include high amount (e.g.: 3,000 GPM)

Suggestion: For systems with low base charges, do not include any consumption allowance. For systems with high base charges but wish to encourage conservation, keep consumption allowance low, if any.



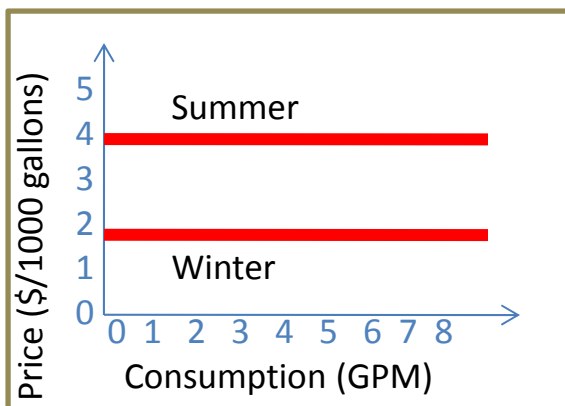
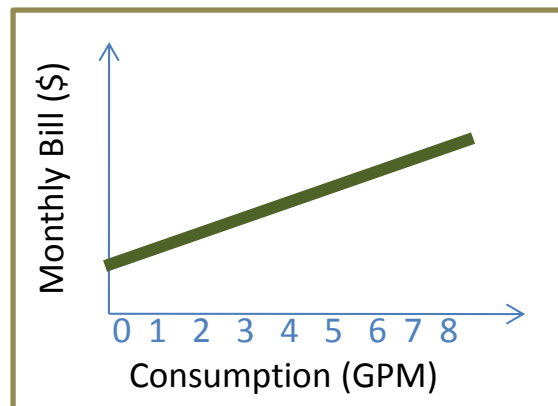
Elements of Rate Structure Designs:

5. Volumetric Rate Structure



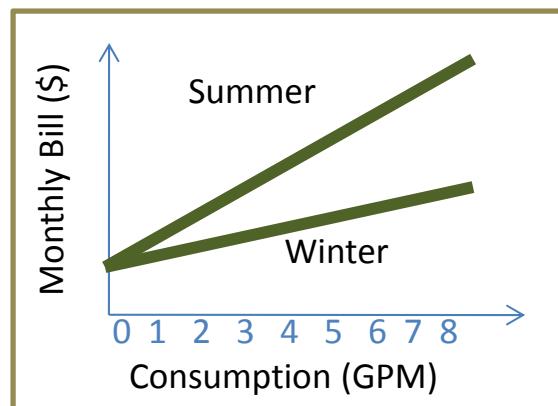
Uniform ("Flat")
Rates

Simple and Fair



Seasonal (Uniform)
Rates

Conservation-oriented,
good for seasonal
communities

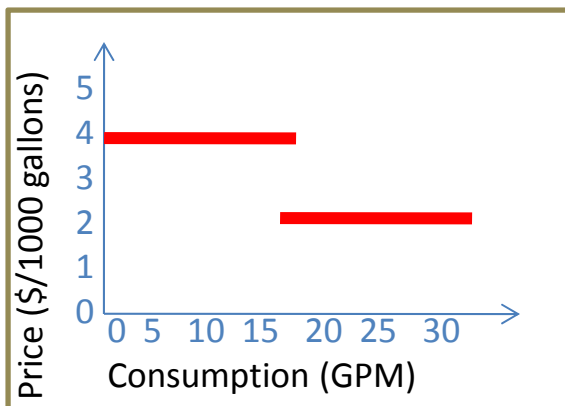


Suggestion: Pick the volumetric rate structure that fits your stated primary objectives best. Do not use decreasing blocks for residential consumption.

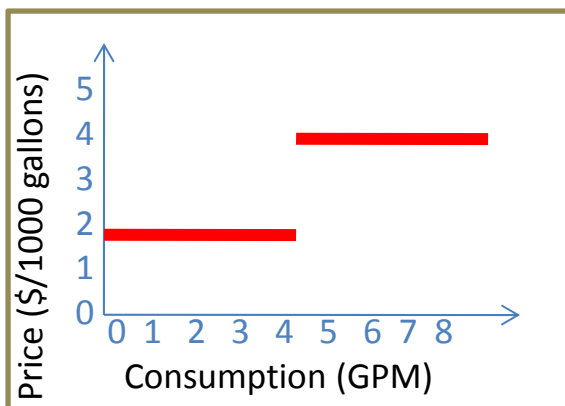
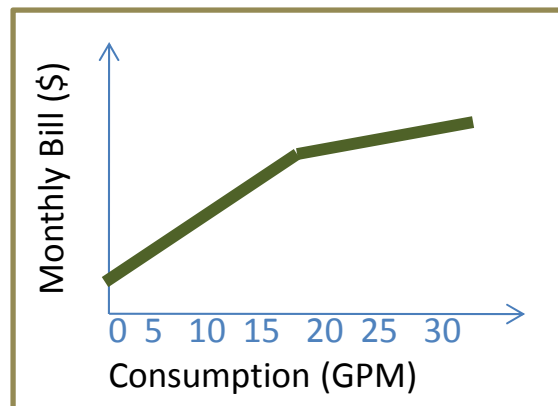


Elements of Rate Structure Designs:

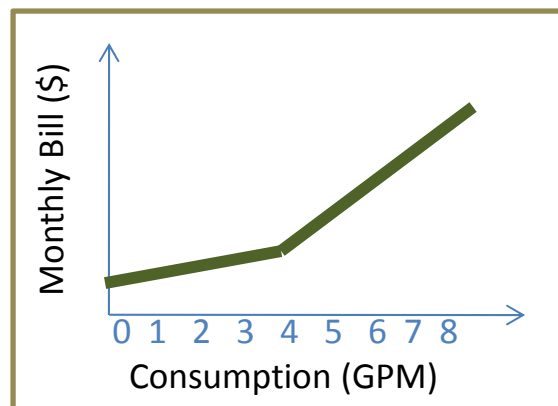
5. Volumetric Rate Structure



Decreasing Block Rates
Provide price break for large users (e.g.: commercial). Do not use for residential.



Increasing Block Rates
Conservation-oriented. Consider large families.

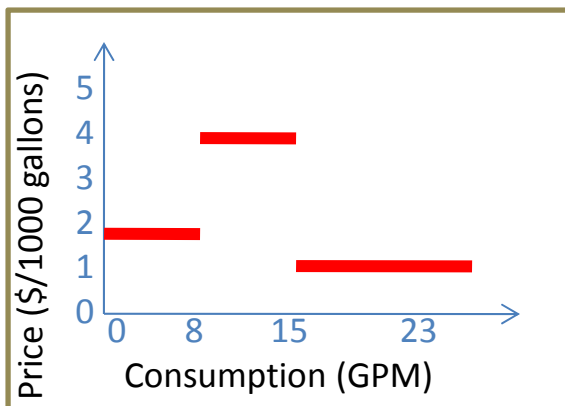


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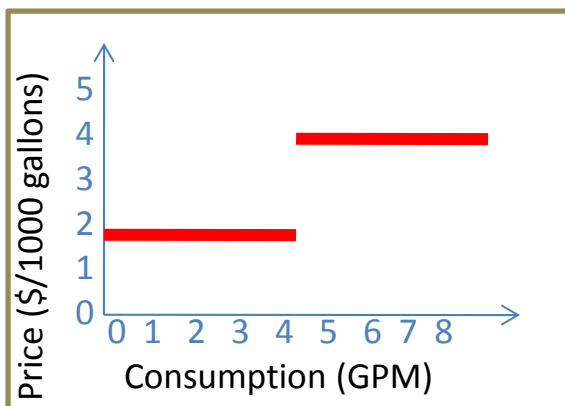
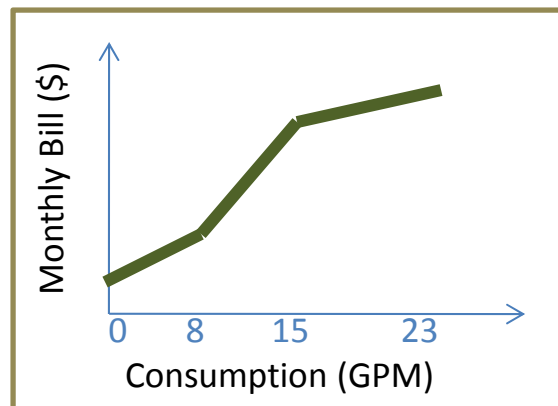


Elements of Rate Structure Designs:

5. Volumetric Rate Structure

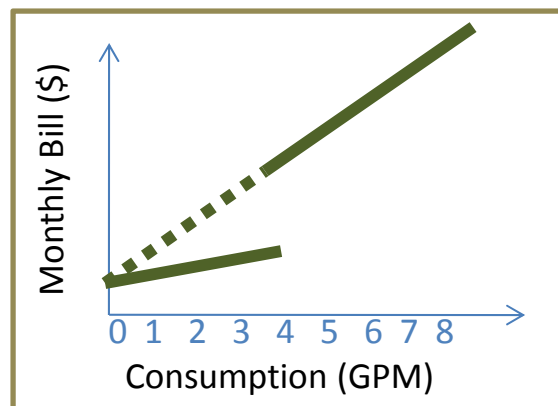


Targeted Block Rates
Increase *and* decrease
based on desired targets:
increasing for residential,
decreasing for commercial



Uniform At One
Block

Complex, but greater
price incentives over
traditional block rate
structures

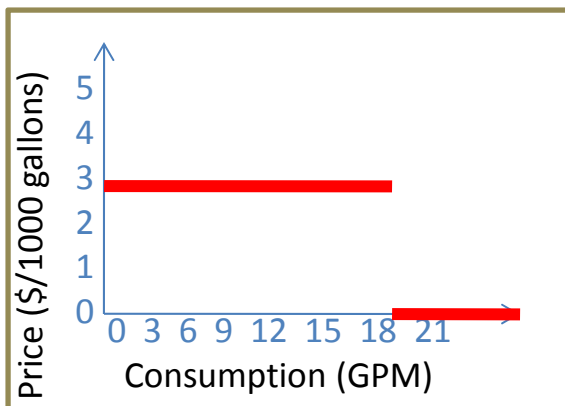


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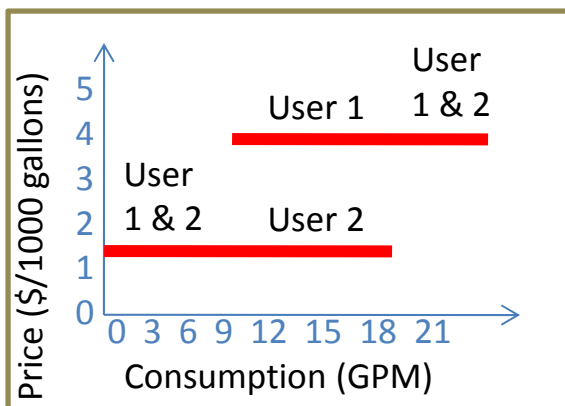
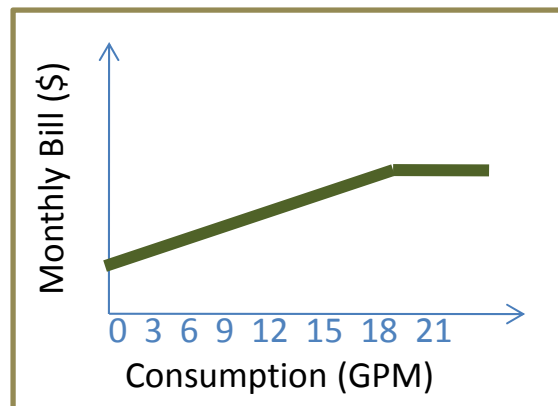
Elements of Rate Structure Designs:

5. Volumetric Rate Structure



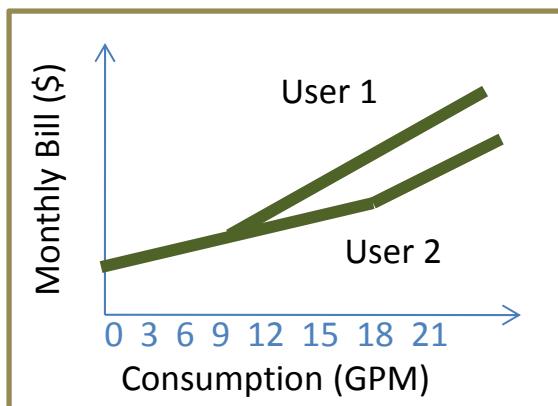
Uniform Rates with Cap

Only appropriate for residential sewer, cap at max. indoor usage level



Budget-based Rates

Tailored to each customer, most equitable, accounts for family size and industry, conservation-oriented, but complex



Suggestion: Pick the volumetric rate structure that fits your stated primary objectives best. Do not use decreasing blocks for residential consumption.



Elements of Rate Structure Designs:

6. (If Applicable) Block Designs

For block rate structures to be effective:

- **Decide on the correct number of blocks**

How many targets should you set on residential usage? Do you want all non-residential use to be charged at a uniform rate, or provide blocks for non-residential use as well?

- **Decide on where the blocks should end/start**

Start the second block only where summertime residential use ends and non-residential use continues (i.e.: charge residential use at uniform rates)? Set increasing block rates for residential customers where the blocks end at average use (e.g.: 5,000 GPM), then double it (e.g.: 10,000 GPM), and then over that (to target irrigation use more specifically)?



Elements of Rate Structure Designs:

6. (If Applicable) Block Designs

For block rate structures to be effective:

- Set significant rate differentials between blocks

Charging only 50 cents/1,000 gallons more in one block than in the preceding block defeats the purpose of using an increasing block rate structure. If you select a block rate structure, select significant rate differentials to see any added value of your rate structure.

- Keep in mind your base charge and consumption allowance

High base charges and consumption allowances may be significant portions of the total bill, greatly diluting the effect of an increasing block rate structure on providing incentives to conserve. Offset high base charges by reducing the consumption allowance, or setting high block rates.



Elements of Rate Structure Designs:

6. (If Applicable) Block Designs

For block rate structures to be effective:

- Meter reading must be punctual

If the meter is read a few days too late, it may unjustly place the last few days' of a customer's use in a higher block.

- Replace meters frequently and repair lines quickly

Faulty meters or leaking pipes will cause the customer to be billed at the wrong block levels, costing either the utility lost revenue or the customer more.



Elements of Rate Structure Designs:

6. (If Applicable) Block Designs

For block rate structures to be effective:

- Consider the adverse effect on large families

Large families consistently use high amounts of water throughout the year and may not have capacity to conserve. An increasing block rate structure therefore negatively affects the customer, without achieving any conservation objectives. Investigate your billing records to estimate the number of residential accounts that consistently use high amounts of water and use this knowledge to select the appropriate block sizes to mitigate this effect. Consider using uniform rates or budget-based rate structures if the community has many large families.



Elements of Rate Structure Designs:

7. (Optional) Temporal Adjustments

- Prepare for drought in advance: create an ordinance *in advance* to give the utility the ability to raise rates temporarily during a water shortage scenario (sometimes called “drought surcharges”).
- Specify the potential rate increases precisely.
- Rate increases should be substantial to encourage conservation.
- Explicitly state the conditions that would trigger the temporary rate changes on and off. Tie the triggers to your water shortage response plans and water reservoir/well levels.

Note: Temporary rate increases that are significant in magnitude have been shown to be effective methods of encouraging conservation while recovering lost revenue.



Elements of Rate Structure Designs:

8. Frequency of Rate Changes

Decide when and how often you will review your rates. Some alternatives:

- Always review your rates annually (recommended)
- Review your financial health indicators annually, and then review your rates if any of the indicators reflect poor financing
- Pass an ordinance or internal policy to raise rates each year automatically based on inflation



Elements of Rate Structure Designs:

8. Frequency of Rate Changes

- *Important: Avoid maintaining low rates at the expense of your utility's financial health. It will either lead to a sudden, massive rate increase in the future or to failing systems and endangering public health.*



Resource

Free guide written for
utility managers in June
2009

<http://www.efc.unc.edu/publications/2009/GuidelinesDesigningRateStructures.pdf>

Designing Rate Structures that Support Your Objectives:
Guidelines for NC Water Systems

June 2009



Funding support for these guidelines provided by the Public Water Supply
Section of the North Carolina Department of Environment and Natural
Resources, and the United States Environmental Protection Agency



Alternative Business Models



Household water use in North America

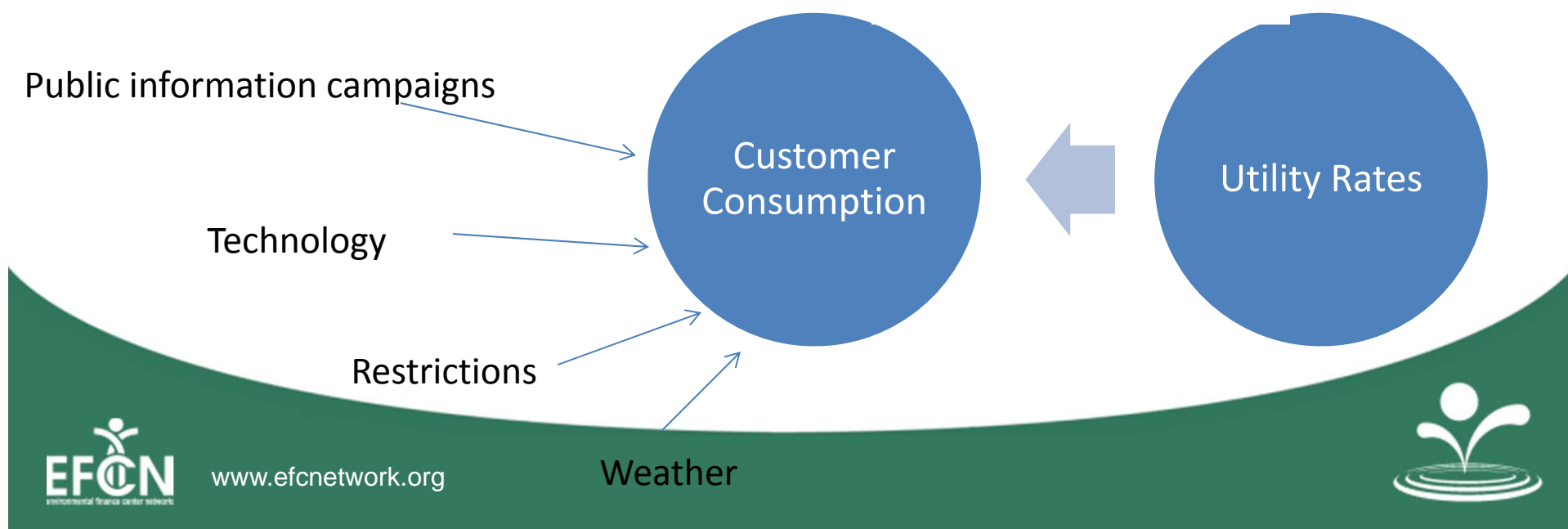
When controlling for weather and other variables.....

A household in the 2008 billing year used 11,678 gallons less annually than an identical household did in 1978.

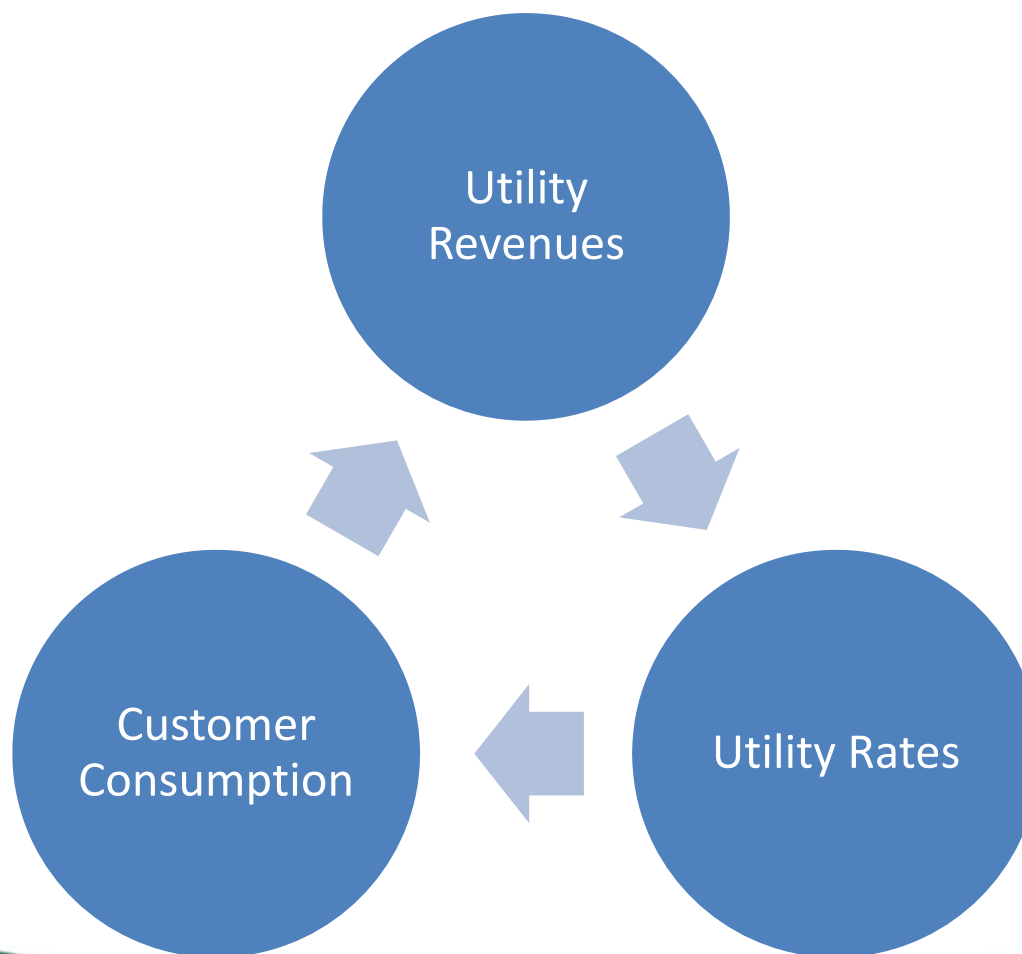
Rockaway, T.D., P.A. Coomes, J.Rivard & B. Kornstein. (2011) *Residential water use trends in North America*. Journal AWWA. February 2011, 76-89.



Utility Business Model

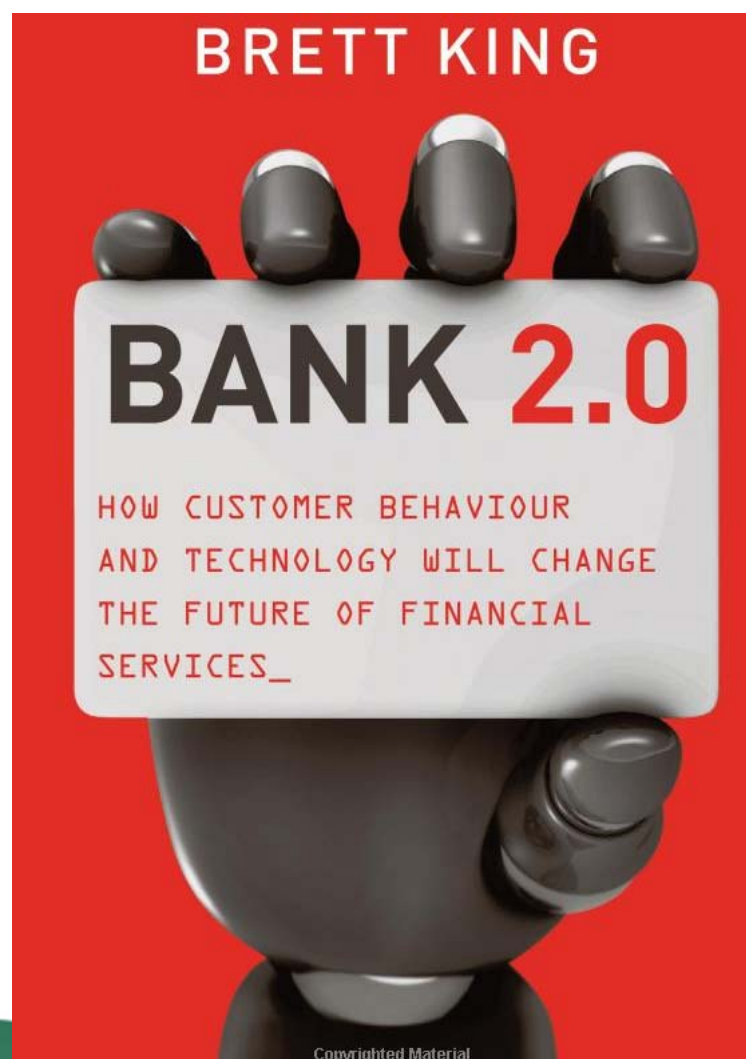


Utility Business Model





Water Utility 2.0?



Peakset Base Model

- Inspiration: electricity peak charge
- A customer's base charge would be individually set based on their three-year rolling average peak

Comparison of BJWSA current residential rate to a “revenue neutral” PeakSet Base model

	Current BJWSA residential rate structure	PeakSet base residential rate structure
% fixed revenue	18%	57%
Base rate	\$6.00/meter – water + \$6.00/meter - irrigation	\$1.85/kgal applied to 3-year rolling average of peak month of demand
Variable rate	\$3.46/kgal of previous month's use	\$0.52/kgal of previous month's use



Varying Degrees of Revenue Stability

	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



CustomerSelect Rate Model

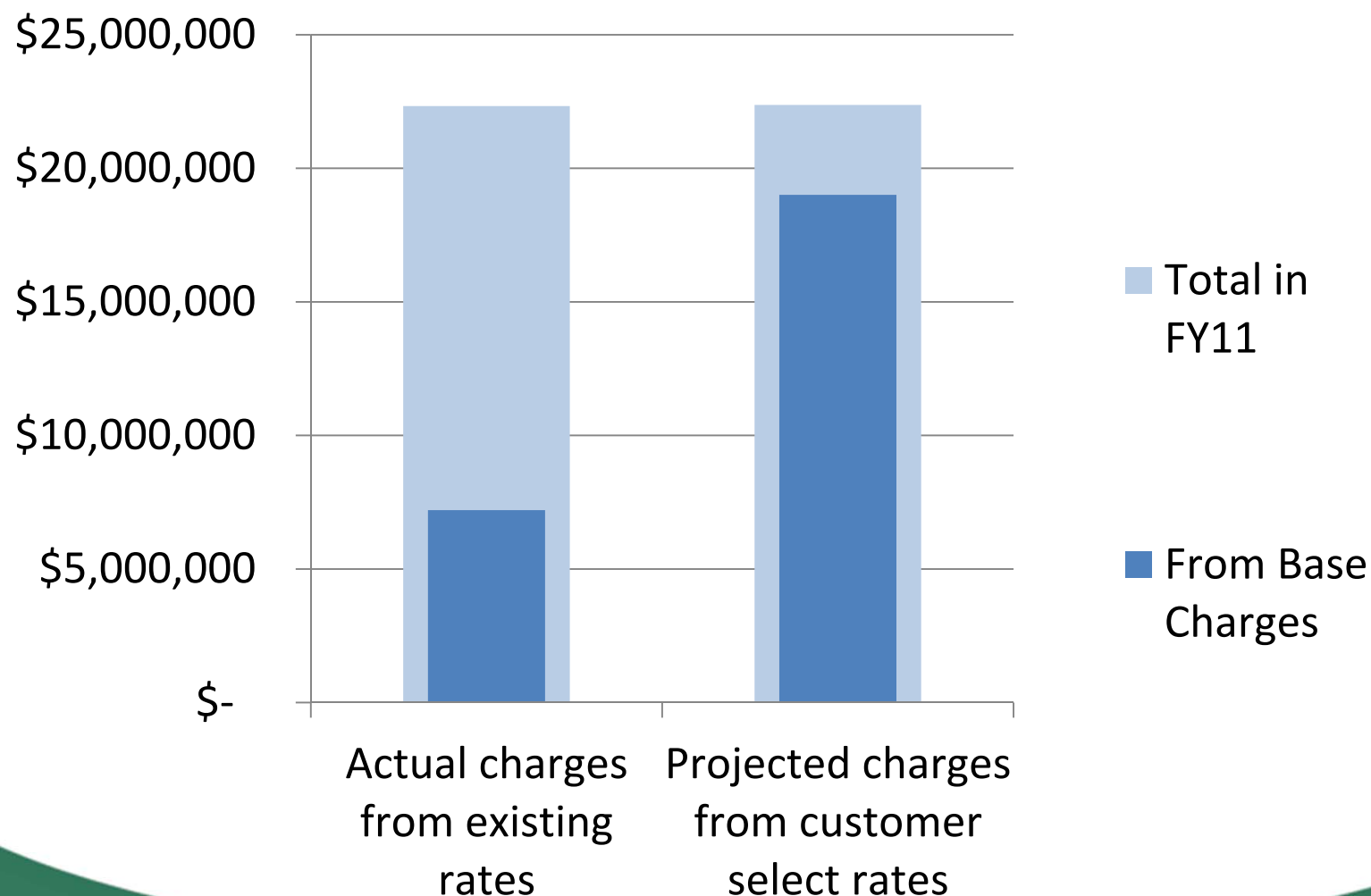
- Individual customers choose plans that best works with their consumption and pay an overage fee if the household uses more than the plan

CustomerSelect Rate plans simulated for Clayton County Water Authority (GA)

Monthly water allotment	Cost for water under current rate structure	CustomerSelect Plan Cost	Overage Charge
2,000 gallons	\$8.93-\$13.13	\$8.13	\$6.83/kgal
6,000 gallons	\$15.23-\$30.38	\$18.70	\$6.83/kgal
10,000 gallons	\$35.43-\$54.18	\$32.52	\$6.83/kgal
24,000 gallons	\$64.75-\$146.68	\$81.30	\$6.83/kgal
unlimited	>\$154.18	\$162.60	NA



Revenue Stability with CustomerSelect



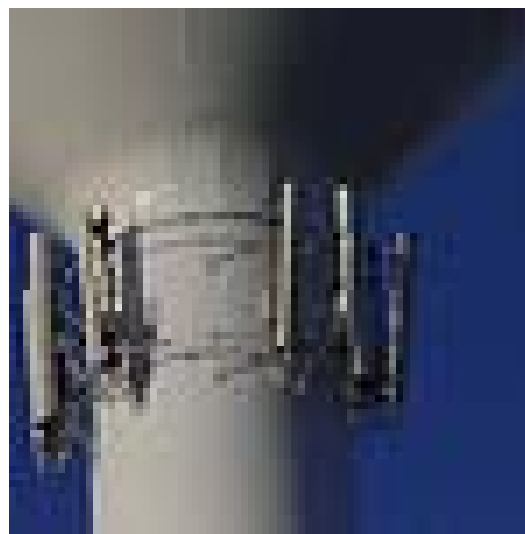
Periodic Charges

- Deposits on new accounts
- Penalties for late payment



Innovative Funding Sources

- For example, rent out your water tower for cellphone receivers



The Debt Market

- Why Borrow?
- Water infrastructure has a long useful life. You may wish to amortize the loan over the life of the equipment so that the people who benefit from the system pay for it



When You Need Cash Now: The Debt Market

- Lenders will look at your creditworthiness, your ability to repay the debt, in determining whether to loan to you and your interest rate



The Debt Market

- Two types—Loans and Bonds
 - Loans are universally available
 - Bonds are typically only available to large systems with significant revenues and managerial capacity



Loans

- Typically from a bank
- Can be from a government-sponsored program such as the Drinking Water State Revolving Fund



Bonds

- A written promise to repay borrowed money (on a definite schedule and usually at a fixed rate of interest for the life of the bond)
- Different types exist:
 - General Obligation (GO)
 - Revenue



Source: bettermondays.com



A Quick Aside On Debt...

- The only way “the bonds” pay for anything is if one of these people lives in your community...



Source: [commons.wikimedia.org/wiki/File:20060825 Barr...](https://commons.wikimedia.org/wiki/File:20060825_Barr...)



Source: picasaweb.google.com/.../fLQy4iWz7ZNrMaDwZG13iA



Loan & Grant Programs

