Financing Sustainable Water
Agenda

8:30 am – Registration and Networking Breakfast
9:00 am – Welcome—Colorado Water Conservation Board
9:15 am – Strategies for Aligning Rates, Revenue and Resources
10:00 am – Colorado’s Water Plan: Meeting Statewide Efficiency Goals from the Bottom Up
10:15 am – Break
10:30 am – Effective Rate Modeling in an Uncertain World
11:45 am – Lunch and Networking
12:30 pm – Water Provider Perspectives: Balancing Stakeholder Interests
1:15 pm – Councilmember Perspective: How to Get to Yes on Rates
2:00 pm – Break
2:15 pm – Real Rate Solutions in Colorado and Beyond
2:45 pm – Live Model Training (Optional)
3:15 pm – Adjourn
Thank You to our Partners and Sponsors
Utility Financial Management: Becoming Harder Than Ever?
Residential Water Sales

Annual residential gallons sold per residential customer (NAWC)
(with five-year moving average)
Isn’t this a Success Story?

- Yes, but with side effects
- Lowered demand means reduced sales revenue
- Reduced sales revenue can mean not fully collecting fixed costs
  - Short-run variable costs (water, pumping energy, chemicals)
  - Long-run capacity costs (supply, transmission, storage, treatment)
- Revenue stability therefore becomes an issue — and conservation is often blamed
- Left untreated, long-term unstable revenue collection can affect bond ratings
“The losses have prompted credit ratings agencies to look closer at the finances of public utilities in Texas. One agency, Fitch, downgraded some of Fort Worth’s water and sewer debt last year, and last week the firm downgraded the debt of the city’s wholesale water supplier. Fort Worth lost $11 million last year because of water conservation.”
What Really Affects Revenue Stability?

- Reduced demand from:
  - efficient fixture replacement under the plumbing and appliance codes
  - active conservation programs
  - the recession: industrial shift layoffs, home foreclosures
- Reduced peak demand in wet years
- Increased infrastructure costs
- Rise in other fixed costs
- Continuing Inflation
Cost-Effective Efficiency and the Real Impact on Rates
Water Flow and Flow of Economic Logic

- System Design
- Costs
- Water Rates
- Demand
Conservation is Part of the Solution

- It is a long-term cost reducer to the utility
- Revenue loss is often due to other drivers
- Every gallon saved is water that does not have to be pumped, treated and delivered
- Conservation is an investment and short-term effects must be planned for
- Reduced utility costs generally mean reduced customer rates in the long-term due to avoided infrastructure capacity increases
Westminster’s Story

- Citizens complained about being asked to conserve when rates would just go up anyway
- Westminster reviewed marginal costs for future infrastructure if conservation had not been done
- Since 1980 conservation has saved residents and businesses 80% in tap fees and 91% in rates compared to what they would have been without conservation
More Stories like Westminster

- AWE is working with two more cities in reviewing marginal costs for future infrastructure if conservation had not been done.
- In one city, preliminary results show a single-family customer pays 22.2% less today.
- In the second city, preliminary results show that customers pay 178% less in tap fees and 6% less for water and sewer rates.
What Will Your Story Be?

- Every story will be different!
- Consider key questions to determine the case for efficiency
- Where do costs come from and what are your future cost risks?
  - Wholesale water costs may be increasing
  - Costs of capital improvements
  - Short run variable costs (treatment, energy, etc.)
- What’s your return on the investment in efficiency?
- How do you quantify it?
- AWE Tracking Tool provides forward-looking analysis
Financing Sustainable Water
FSW: Key Concepts

- Revenue instability is a feature of **ALL** rate structures
- Efficiency objectives should be identified at the start
- One size does not fit all
- Embracing uncertainty enables better decision-making
- Better rate analysis requires good data
- Customer understanding and empowerment is key
- Sound financial policies can support fiscal sustainability
What is Financing Sustainable Water?

- **Building Better Rates in an Uncertain World**: A Handbook to explain key concepts, provide case studies and implementation advice
- **AWE Sales Forecasting and Rate Model**: Innovative, user-friendly tool to model scenarios, solve for flaws, and incorporate uncertainty into rate making
- **FinancingSustainableWater.org**: Web-based resources to convene the latest research and information in one location
The Heart of the Problem

- Water rates have traditionally been focused solely on historical cost-recovery.
- When system costs change quickly, and perhaps unpredictably, historical rates do not reflect today’s cost consequences.
- Rates do not then give customers correct information to make consumptive decisions.
BUILDING BETTER WATER RATES FOR AN UNCERTAIN WORLD
BALANCING REVENUE MANAGEMENT, RESOURCE EFFICIENCY, AND FISCAL SUSTAINABILITY
Thomas Chesnutt, A&N Technical Services

SECTION I: Introduction
SECTION II: Today’s Imperative for Utility Financial Management
SECTION III: The Role of Ratemaking
SECTION IV: Building a Better (Efficiency-Oriented) Rate Structure
SECTION V: Financial Policies & Planning for Improved Fiscal Health
SECTION VI: Implementing an Efficiency-Oriented Rate Structure

Appendices
- Appendix A – Costing Methods
- Appendix B – Demand and Revenue Modeling
- Appendix C – AWE Sales Forecasting and Rate Model User Guide
Introduction to Rate Setting

- Budget-based water rates
- Marginal/Incremental Cost pricing
- Volumetrically-based Fixed Charges
- “Value of Service” pricing
- Policy-based rates
- Drought pricing
- Additional “innovative” rate structures
Building an Efficiency-Oriented Structure

- Identify and Prioritize Ratemaking Objectives
- Determine Revenue Requirements
- Allocate Costs
- Design A Rate Structure
- Evaluate the Rate Structure against Objectives
- Decide on a Rate Structure
What Answers Are Needed?

In an uncertain world, what information could lead to better water rates?

- **Customer Consumption Variability**—How can weather, drought/shortage, or external shock affect customer consumption?
- **Demand Response**—If I change rates, what happens to demand volume and revenue?
- **Drought Pricing**—How should I plan for water rates under the contingency of nonzero drought/shortage occurrence?
- **Probability Management**—What is the likelihood of deficit?
- **Fiscal Sustainability**—What are likelihoods over a 5-year time horizon
- **Affordability**—Can customers afford water service?
Tools to Evaluate Rates

- Modeling Water Demand Variability
- Modeling Water Revenue Variability
- Customer Bill Analysis
- Affordability Assessment
- Assessing Fiscal Sustainability

The AWE Sales Forecasting and Rate Model can do all this!
Affordability Resources

- Average Bills less than some fraction of median income in community (USEPA) does not guarantee “affordability”
- Need in-depth and informative understanding of affordability in your service area
- Resources:
  - UNC EFC Water Rates Affordability Assessment Tool
  - The Affordability Assessment Tool for Federal Water Mandates from AWWA, WEF and the US Conference of Mayors
AWE Sales Forecasting and Rate Model helps anticipate the impact of rate changes.

This can be used to help clearly explain changes to customers, Councils and Boards.

Provides clarity, reassurance, and an opportunity to make changes before a rate adjustment takes place.
Drought Pricing for Revenue Neutrality

- Shortages are when, not if.
- Imposing curtailments on customers affects revenues.
- Drought rates that maintain revenue neutrality through various drought stages can be planned for, communicated, and effectively implemented.

### 3. Calculate Revenue Neutral Rates by Drought Stage

The revenue neutral rates calculator will quickly find a set of rates for a given drought/shortage stage that will generate the same revenue condition. There are four steps to using the calculator:

**Choose Drought Stage to Evaluate:**

- Stage 0

**Choose Method for Calculating Revenue Neutral Rates:**

1. Scale rates so that each customer class is revenue neutral

**Leave or Adjust Rate in Block?**

<table>
<thead>
<tr>
<th>Class</th>
<th>Block 1</th>
<th>Block 2</th>
<th>Block 3</th>
<th>Block 4</th>
<th>Block 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family</td>
<td>Leave</td>
<td>Adjust</td>
<td>Adjust</td>
<td>Adjust</td>
<td>Adjust</td>
</tr>
<tr>
<td>Multi Family</td>
<td>Adjust</td>
<td>Adjust</td>
<td>Adjust</td>
<td>Adjust</td>
<td>Adjust</td>
</tr>
<tr>
<td>CII</td>
<td>Adjust</td>
<td>Adjust</td>
<td>Adjust</td>
<td>Adjust</td>
<td>Adjust</td>
</tr>
<tr>
<td>Landscape</td>
<td>Adjust</td>
<td>Adjust</td>
<td>Adjust</td>
<td>Adjust</td>
<td>Adjust</td>
</tr>
<tr>
<td>Not in use</td>
<td>Leave</td>
<td>Leave</td>
<td>Leave</td>
<td>Leave</td>
<td>Leave</td>
</tr>
<tr>
<td>Not in use</td>
<td>Leave</td>
<td>Leave</td>
<td>Leave</td>
<td>Leave</td>
<td>Leave</td>
</tr>
</tbody>
</table>

[Image of a graph or chart related to drought pricing and revenue neutrality]
Managing Weather Risk

- Wide swings in revenue between wet years and dry years
- Need to explore market-based financial tools for managing weather risk (insurance, derivatives)
- Example: municipal snow removal insurance
- AWE published white paper in 2014
- Posted at www.financing sustainablewater.org
Financial Planning and Policies

- Revenue and Expense Forecasting
- Revenue Management and Fiscal Sustainability
- Rate Stabilization – Financial Planning
- Adaptive Rate Design
- Revenue Recovery Mechanisms
- Cost Recovery Mechanisms
- Conclusion: Transformational Change for Efficiency
- Case Study: Birmingham, Alabama
  (http://efc.web.unc.edu/2012/08/01/the-success-story-of-one-water-utilitiy-financial-policies/)
Improving your Credit Rating*

1. A Rate Stabilization Fund (used not too often)
2. A low dependence on connection fees
3. Significant portion of revenues from fairly reliable customers
4. Insignificant additional upcoming debt
5. Fully-funded pension and post employment benefits
6. Strong management team

*Source: UNC Environmental Finance Center
How Much is Enough in Reserve?

- Policy Example: Contra Costa Water District
  - “The Rate Stabilization Reserve Fund will be drawn down to smooth rate increases consistent with the District’s Rate Setting Policy and to ensure that minimum debt service coverage of 1.25 times annual debt service is met. Specifically, they will be applied in any year where other revenues are not sufficient to meet the required debt service coverage ratio of 1.25 times. They will also be applied if meeting only minimum coverage levels could result in the District’s bond ratings being downgraded.”

- Probability Analysis in setting appropriate reserve levels:
  - Sam Savage and Shayne Kavanaugh, The Sequestron Analytics Magazine, November/December 2013
Why not Debt Finance Conservation?

- Most utilities NOT debt financing conservation
- Issue is Government Accounting Standards Board (GASB) rules
- Accounting principles require assignment of an “asset” to the debt
- Conservation is not “owned” by the utility – it is usually on the customer’s side of the meter
- Without “control of the asset” a utility CFO doesn’t want to debt finance and have a liability without an asset on the balance sheet
- We are working with GASB to fix this
Other Financing Solutions

- WIFIA

- Other Opportunities
  - Green/Climate Bonds
  - State Revolving Funds
  - Public-Private Partnerships
  - Tax Initiatives
  - State-level funding
    (Colorado Water Conservation Board)
Communicating Change
The Political Reality

- We don’t like to revise our rates
- It is politically unpopular, so rates are changed as little as possible
- The inevitable inflationary increase is postponed until it is a crisis, much less increases in other costs
- Conservation is often blamed for financial challenges – even when there are no active conservation programs in place
- This sends the wrong message to consumers
Conservation driving up water rates in Louisville
Environmental concerns challenge bottom line at Louisville Water Co.

2:03 AM, Jul. 28, 2013

Saving water adds up to rate hikes
Conservation hurts agency finances, so rates must increase
By Morgan Cook and Bradley J. Fikes | 7:09 a.m. July 27, 2015 | Updated, 8:21 a.m.

Punished For Conserving, Californians See Water Rates Rise As Cities Lose Money In Drought
July 5, 2015 11:52 AM

IS WATER CONSERVATION REALLY BANKRUPTING TEXAS CITIES, OR ARE THEY JUST BAD AT PLANNING?
By AMY SILVERSTEIN
WEDNESDAY, FEBRUARY 19, 2014 | 2 YEARS AGO

The people of Fort Worth have been doing a good job of using their water sparingly, and that has the Fort Worth Water Department very, very worried.

Recent news reports claim that Fort Worth has been
The city’s water department plans to increase rates by more than 40 percent in the next five years.

By July 2020, a unit of water that today costs $4.36 will cost $6. Customers also pay meter fees, which will also rise.

So what’s driving the soaring rates? This is awkward but … you’re part of the problem. You and a bunch of other factors. Let’s run through them.

You can blame yourself for saving too much water.

The price hikes are driven – ironically enough – by the cutbacks San Diegans are making because of the drought. If the city is selling less water, then the city has to charge more for each drop it sells.

The city sold about 76 million units of water in 2014. Each unit is about 750 gallons. Next year, the city only expects to sell 64 million units because of water-use restrictions mandated by the state.

Gordon Hess, vice chairman of the Rates Oversight Committee, said he worries the city’s five-year plan is based on long-term projections that could be wrong.

“In the outer years, do we still need those rate increases?” he said. “Those may or may not be needed if sales rebounded or we get a wetter year.”
Public Engagement

- Integrated and Collaborative Planning
- Securing Buy-In from Leadership
- Getting to Yes: Approval from Elected Officials
- Internal Communications and Customer Service
- The Public as Partners
- Clear Signals and Empowered Customers
- Maintaining Dialogue and Fine-tuning
Communicating the Value of Water

▶ Water: What You Pay For

- Video
  ▪ Explains water service and cost
  ▪ Pipes, plants, power and people that keep water flowing
  ▪ Free for utility use!

▶ Water Rates Messaging

- Consumer-friendly language
- Explain that conservation keeps rates DOWN in the long term
- Use for speeches, talking points, press releases, etc.

“Every gallon saved is a gallon that doesn’t need to be pumped, treated or delivered – those savings are reflected in your water bill. **Conservation helps slow the rise of water rates over the long-term.**”
Let’s Change the Conversation

- Water Rates Message Plan
- Jargon-free messages on:
  - The service and value water utilities provide
  - Benefits and value of efficiency investments
  - The need for a rate revision or new rate structure
  - The relationship between conservation and rates
  - The impact of drivers such as drought or water quality
- Customizable to tell your story!

www.FinancingSustainableWater.org
Financial Instruments to Manage Revenue Risk

A new white paper explores opportunities for utilities to use financial instruments - such as derivatives, insurance and bonds - to manage weather-related revenue risk in an increasingly volatile climate.

Rates. Revenue. Resources.

Financing Sustainable Water is an initiative of the Alliance for Water Efficiency. It was created to provide practical information to guide utilities from development through implementation of rate structures that balance revenue management, resource efficiency and fiscal sustainability. This website will be updated frequently with new content and we encourage visitors to return often for additional information and resources. The Alliance serves as a North American advocate for water efficient products and programs, and provides information and assistance on water conservation efforts. Learn More

WATER MANAGERS
Find guidance on sustainable financial management

ELECTED OFFICIALS
Support your utility through smart management practices

CONCERNED CITIZENS
Learn how you can help create a sustainable water future

MEDIA
Get facts on today’s water challenges and solutions

RATES HANDBOOK
Building Better Rates for an Uncertain World

RATE MODEL
Sales Forecasting and Rate Model

RECENT NEWS
- Welcome to Financing...
- Case Study: Cobb County Public Engagement Success
Financing Sustainable Water