

Ratemaking & Affordability: Meeting Multiple Objectives

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Outline of Session

- ◆ **Promoting Resiliency vs. Affordability**
- ◆ **Strategic Goalsetting in Rate Structures**
- ◆ **Lifeline Structural Features in Rates**
- ◆ **Examples of Enhanced Affordability Through Rate Structuring**
- ◆ **Conclusions**



Moving Forward as a Region

- ◆ **Regional planning efforts have focused on preparing water systems for potential disruptions:**
 - Natural Disasters
 - Drought/Climate Change
- ◆ **Initiatives to enhance resiliency include:**
 - Building/retrofitting infrastructure
 - Expanding/developing other supply sources
 - Investing in training and public outreach
 - Promoting water demand reductions
- ◆ **These initiatives come with an additional cost burden; need to keep affordability in mind**

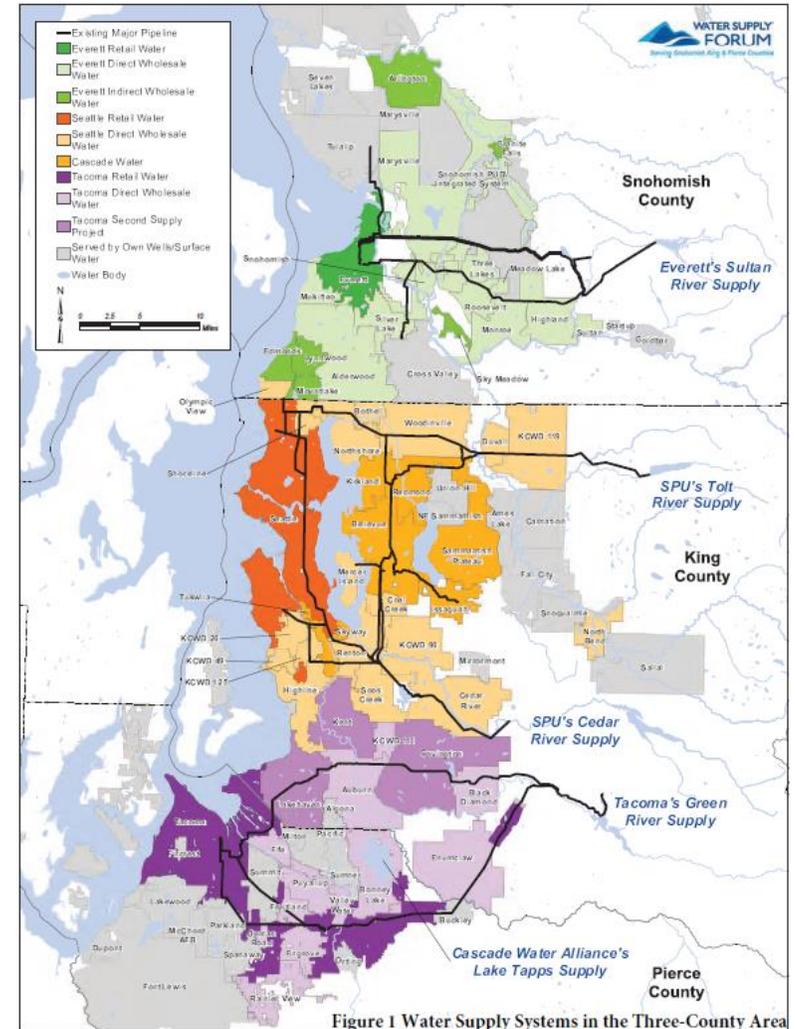
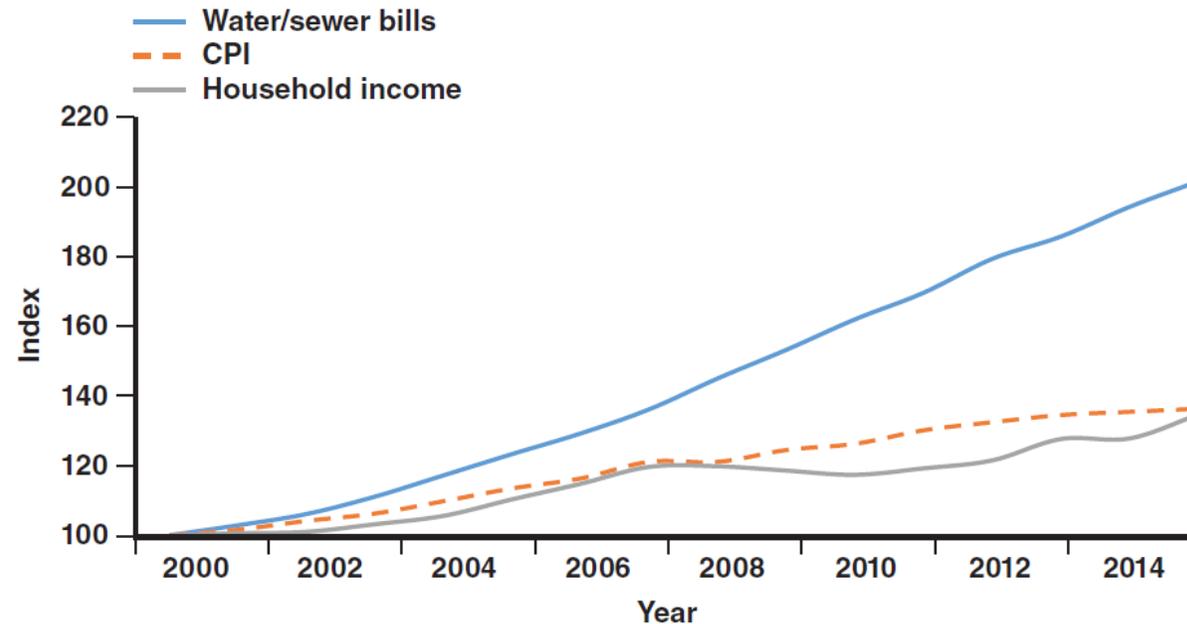


Figure 1 Water Supply Systems in the Three-County Area



A Root Cause of Water/Sewer Affordability Concerns

FIGURE 1 Growth in key inflation and income measures, 2000–2015



Sources: US Bureau of Labor Statistics 2016a, 2016b; US Census Bureau 2016

CPI—consumer price index



Further Factors Impacting Affordability

Rate-making Phase	Features/Factors Enhancing Affordability	Features/Factors Diminishing Affordability
Revenue Requirements	<ul style="list-style-type: none">• Full Cost Recovery Through SDCs and Other (Non-Rate) Fees• Smoothing Rate Increases• Less Aggressive Capital Funding Policies	<ul style="list-style-type: none">• Frontloading Rate Increases• More Aggressive Capital Funding Policies
Cost Allocations	<ul style="list-style-type: none">• Delineation of Customer Classes• More Detailed Cost Structure Information	<ul style="list-style-type: none">• Aggregation of Customer Classes• Less Detailed Cost Structure Information
Rate Design	<ul style="list-style-type: none">• Low Fixed Charges• Usage Allowances• Inclining-Block Volume Charges	<ul style="list-style-type: none">• Flat Charges• High Fixed Charges• Declining-Block Volume Charges



Recognizing the Need to Balance Policy Objectives

◆ Sound water/sewer rate structures balance a variety of objectives*:

Revenue/Rate-Related

Revenue Sufficiency
Revenue Stability
Philosophical Continuity
System Sustainability

Cost-Related

Consistency with Costs
Conservation & Efficiency
Fairness & Equity

Practical-Related

Legal Defensibility
Simplicity
Feasibility
Affordability

* Per Bonbright, Danielsen, and Kamerschen in *Principles of Public Utility Rates*

◆ Many utilities review their rates regularly to ensure that they:

- Are cost-based and legally defensible
- Generate sufficient revenue
- Equitably recover costs from customer classes

❖ Prioritizing Policy Objectives

◆ Pairwise Comparison:

- Compare two objectives at a time
- Assign weighting “points” to each objective
- Evaluate relative priority of objectives



◆ Our Version:

- For each comparison, assign 1 – 5 points to each objective



- The points assigned to both objectives should add up to 6
- Relative ranking is determined by adding up all points



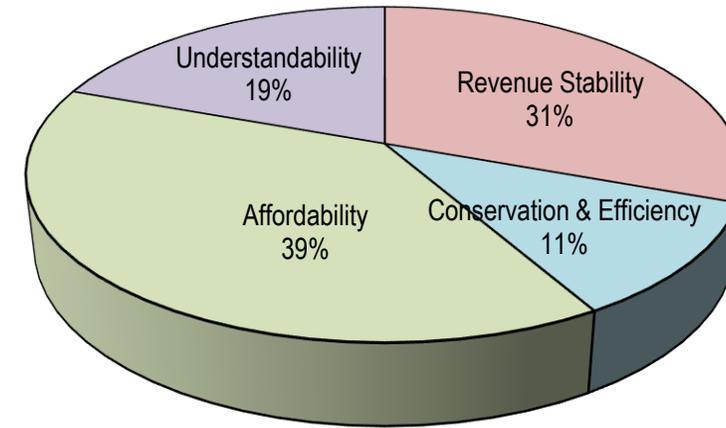
Sample Pairwise Comparison

5	Revenue Stability	vs.	Conservation & Efficiency	1
2	Revenue Stability	vs.	Affordability	4
4	Revenue Stability	vs.	Understandability	2
1	Conservation & Efficiency	vs.	Affordability	5
2	Conservation & Efficiency	vs.	Understandability	4
5	Affordability	vs.	Understandability	1

Objective	Total Score	Ranking
Revenue Stability	5 + 2 + 4 = 11	2
Conservation & Efficiency	1 + 1 + 2 = 4	4
Affordability	4 + 5 + 5 = 14	1
Understandability	2 + 4 + 1 = 7	3

◆ Various factors may impact the results:

- Participant role/objectives
- Participant personality traits (e.g. risk aversion)
- When the comparison is performed





Case Studies in Prioritizing Objectives

Agency	Year of Study	Weighting of Objectives			
		Revenue Stability	Conservation & Efficiency	Affordability	Understandability
Woodinville Water District	2012	28%	25%	30%	17%
City of Bellevue	2012	42%	16%	29%	13%
Water Supply Forum	2013	32%	19%	27%	22%
Covington Water District	2013	31%	11%	39%	19%
East Wenatchee Water District	2016	31%	8%	28%	33%
City of Redmond	2017	32%	26%	22%	20%



Introducing/Enhancing Lifeline Rate Features

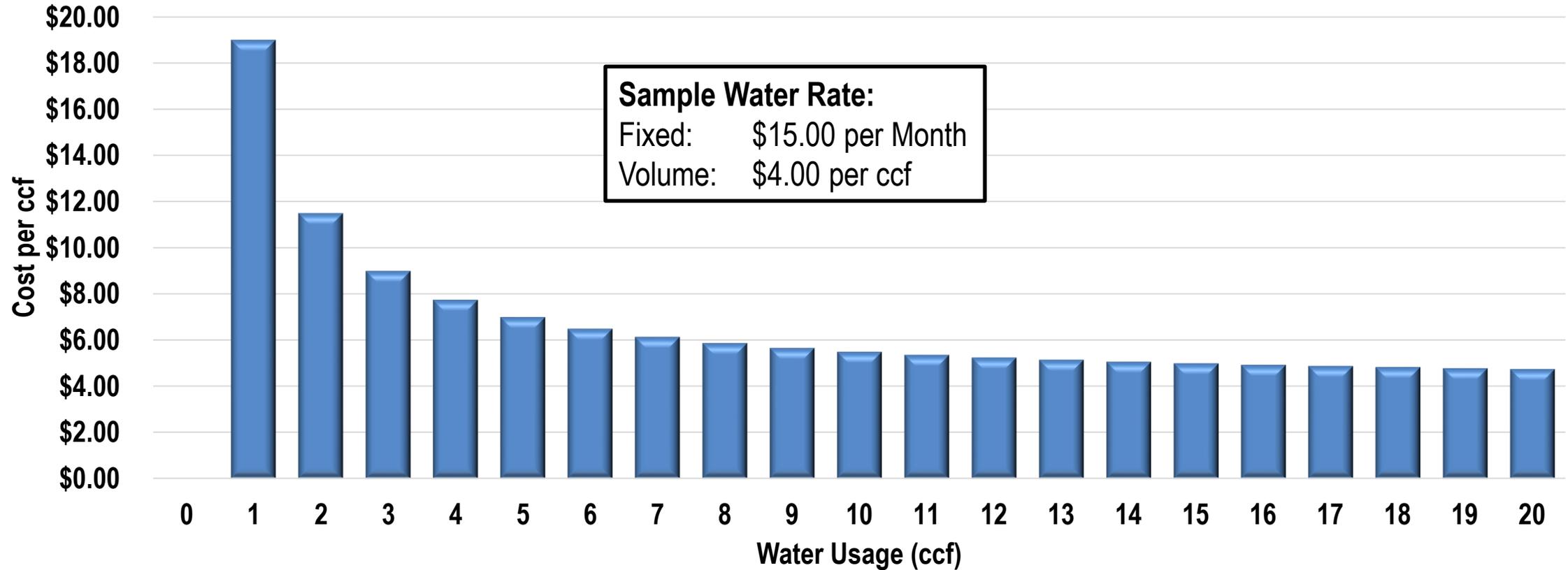
Features Highlighted Earlier:

- ◆ **Proportionality (Ability to Control One's Bill)**
- ◆ **Low Fixed Charges**
- ◆ **Usage Allowances**
- ◆ **Increasing Block Volume Charges**
- ◆ **Delineation of Customer Classes; Class-Specific Rate Structures**



How Rates Can Frustrate Cost-Conscious Customers

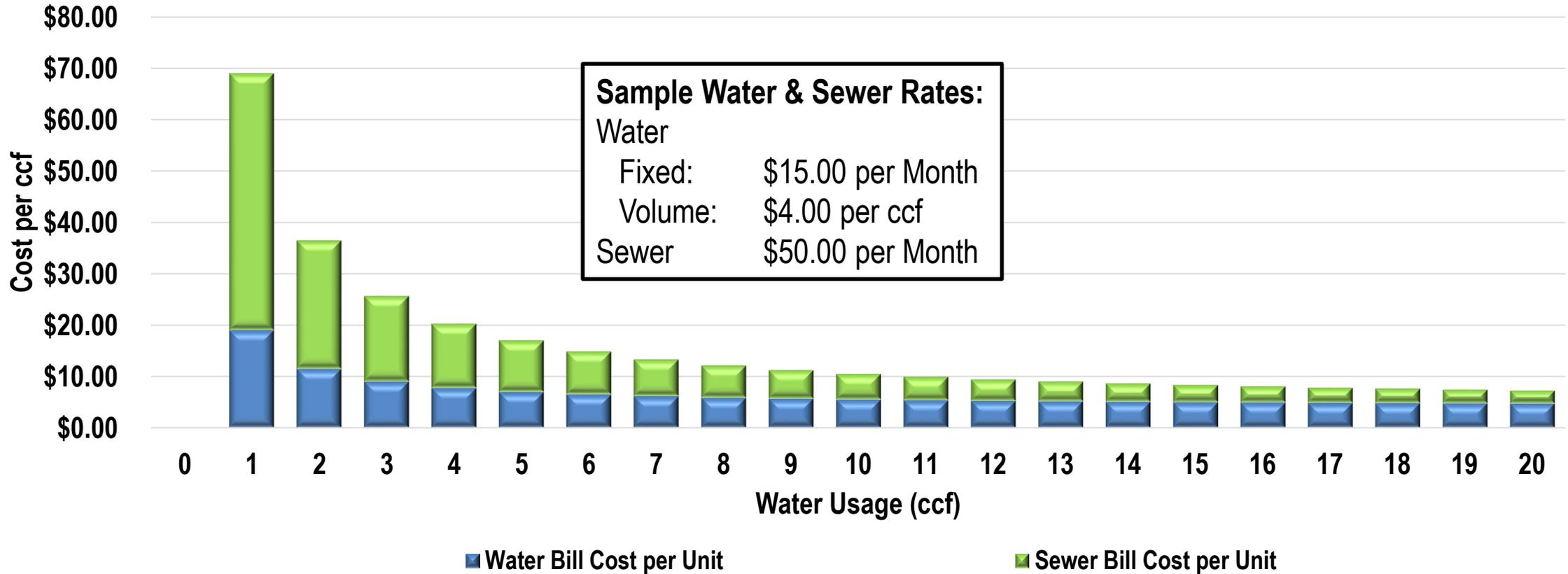
Sample Water Bill: Unit Cost vs. Amount of Water Used





How Rates Can Really Frustrate Cost-Conscious Customers

Sample Water/Sewer Bill: Unit Cost vs. Amount of Water Used





Ways to Enhance Lifeline Features

- ◆ **Introduce/Enhance Volume-Based Sewer Charges**
 - Based on average winter (indoor) water use
- ◆ **Reduce Fixed Charges**
 - Include a moderate volume allowance
- ◆ **Increase Block/Seasonal Volume Charges**
- ◆ **Create Separate Lifeline Customer Class**
 - Benefits lifeline customers to the extent that they use less and peak less
- ◆ **Targeted Assistance for Low-Income Customers**
 - “No hurdle” conservation program
 - On-call plumbing repair
 - Forgiving leak adjustments



Benefits of Enhanced Lifeline Features

- ◆ **Improves customer acceptance by offering greater control over bills**
- ◆ **Reduces affordability hurdle; assistance dollars can go farther**
- ◆ **Related water efficiency programs can target impacted sectors**
- ◆ **Enhanced customer class differentiation can improve equity**
- ◆ **Usage allowances can stabilize bills/revenues, addressing snowbird/vacancy issues**
- ◆ **Synergy of rates, programs, customer relations, and finance improve utility presence and climate**



Some Real-World Examples

Agency	Affordability-Enhancing Features
Cascade Water Alliance	<ul style="list-style-type: none">– Recovers most costs based on summer usage– Fixture-replacement program for low-income residents
City of Blaine	<ul style="list-style-type: none">– Separate low-income senior/disabled rate class; commercial strength classes– Considered volume-based sewer rate structure
King County	<ul style="list-style-type: none">– Considering redefining residential equivalents based on square footage
City of Olympia	<ul style="list-style-type: none">– Offers discounted sewer rate for homes using ≤ 500 cubic feet bimonthly– System development charge (SDC) incentives in urban core areas to recognize infrastructure density/age; could also apply to ongoing rates
City of Redmond	<ul style="list-style-type: none">– Reduced volume built into residential sewer rate– Imposes residential water SDCs based on home size
Woodinville Water District	<ul style="list-style-type: none">– Includes 2 ccf per billing period in fixed charge– Imposes rate surcharge on high usage based on “carrying cost” of SDC



How to Fund a New Initiative?

Funding Mechanism	Pros	Cons
Rates – Fixed Charges	<ul style="list-style-type: none">– Greater revenue stability/reliability– Consistency with fixed cost structure	<ul style="list-style-type: none">– Diminishes conservation incentives– Less affordable for low users
Rates – Volume Charges	<ul style="list-style-type: none">– Promotes conservation incentives– More affordable for low users	<ul style="list-style-type: none">– Greater exposure to revenue risk– Less consistent with fixed cost structure
System Development Charges (SDCs)	<ul style="list-style-type: none">– Alleviates burden on ratepayers	<ul style="list-style-type: none">– Reliant on system growth– Limited to capital investment/debt
Capacity Surcharges	<ul style="list-style-type: none">– Alleviates burden on low users	<ul style="list-style-type: none">– More complicated to administer



Conclusions

- ◆ **Continued utility cost pressure likely requires direct customer assistance to mitigate impacts on low-income customers**
- ◆ **Rational cost-based ratemaking offers tools to ensure that we are not mitigating a self-inflicted problem**
- ◆ **Lifeline features offer customers greater control of their bills, improving customer acceptance and providing some surprising fringe benefits for the utility**
- ◆ **An integrated approach (rates, assistance, conservation, etc.) can enhance outcomes for low-income households**



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