Water Utilities in the United States

Current Status & Strategies to Enhance Financial Sustainability

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IWA Workshop

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Outline

- Current Status of U.S Water Utilities
- Strategies to Enhance Sustainability
  - Cost recovery
  - Credit management
  - Planning and forecasting
  - Tariff structures
  - Customer Affordability
  - Stakeholder Education

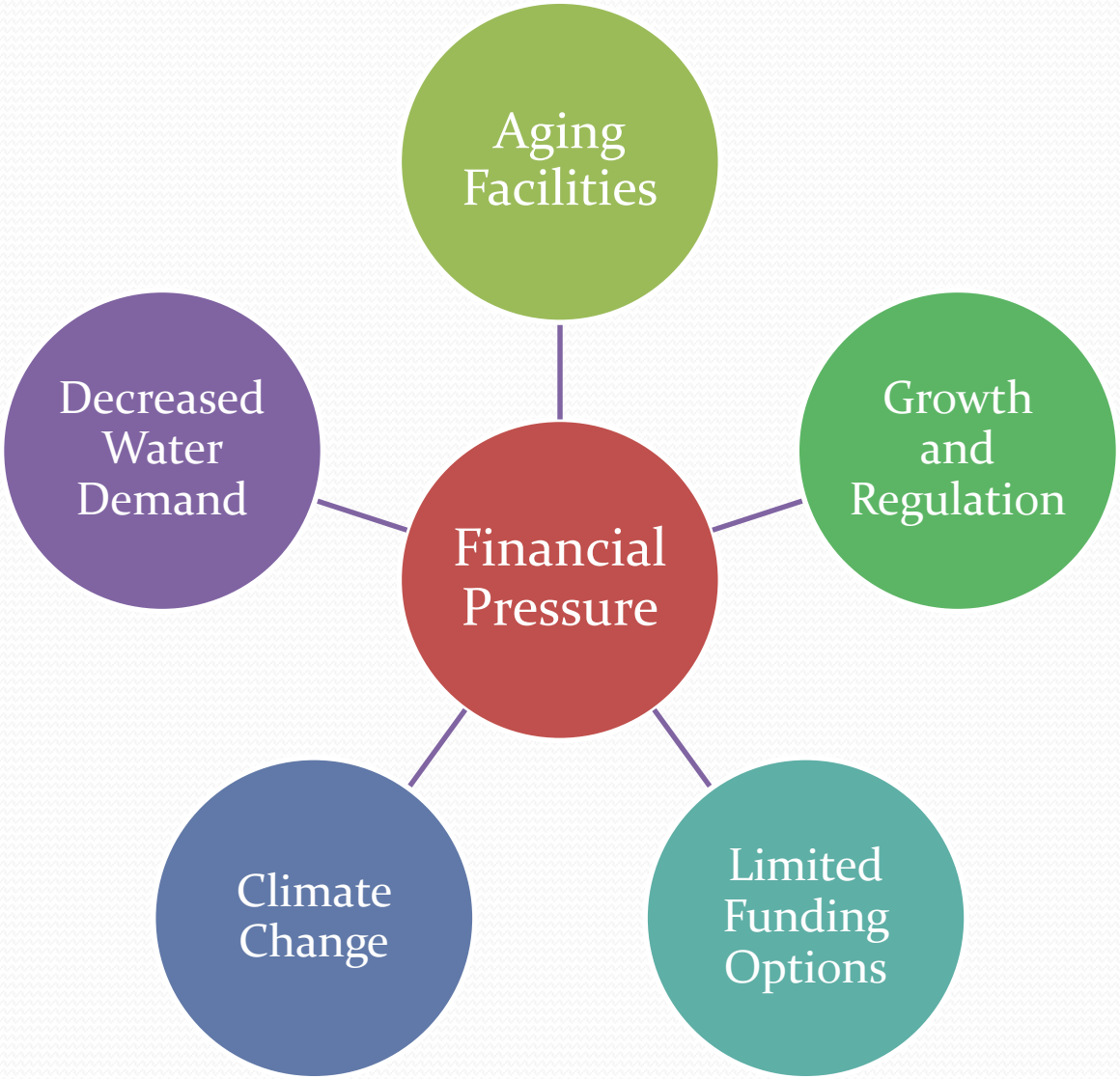
Current Status of U.S. Water Utilities

Water Utility Governance Structures

Structure	Decision Authority	Disadvantages	Advantages
Municipal*	City Council	Competing interests; heavily influenced by elections	Flexibility to fund future reserves; broad taxing authority
Special District	Board	Focused on single service; limited election influence	Flexibility without taxing authority
Private Investor-Owned Companies	Public Utilities Commission	Focus on historical costs; limit to use of reserves	Promotes full cost pricing

*Only 3 states have comprehensive regulation of government owned utilities, though other states regulate some aspect of tariff process (for example, California).

Water Utility Challenges



The "New Normal"

Consumption Decline

- Technological
- Economic
- Customer Education

Rising Costs

- Deteriorating infrastructure
- Regulatory requirements
- Reduced federal support

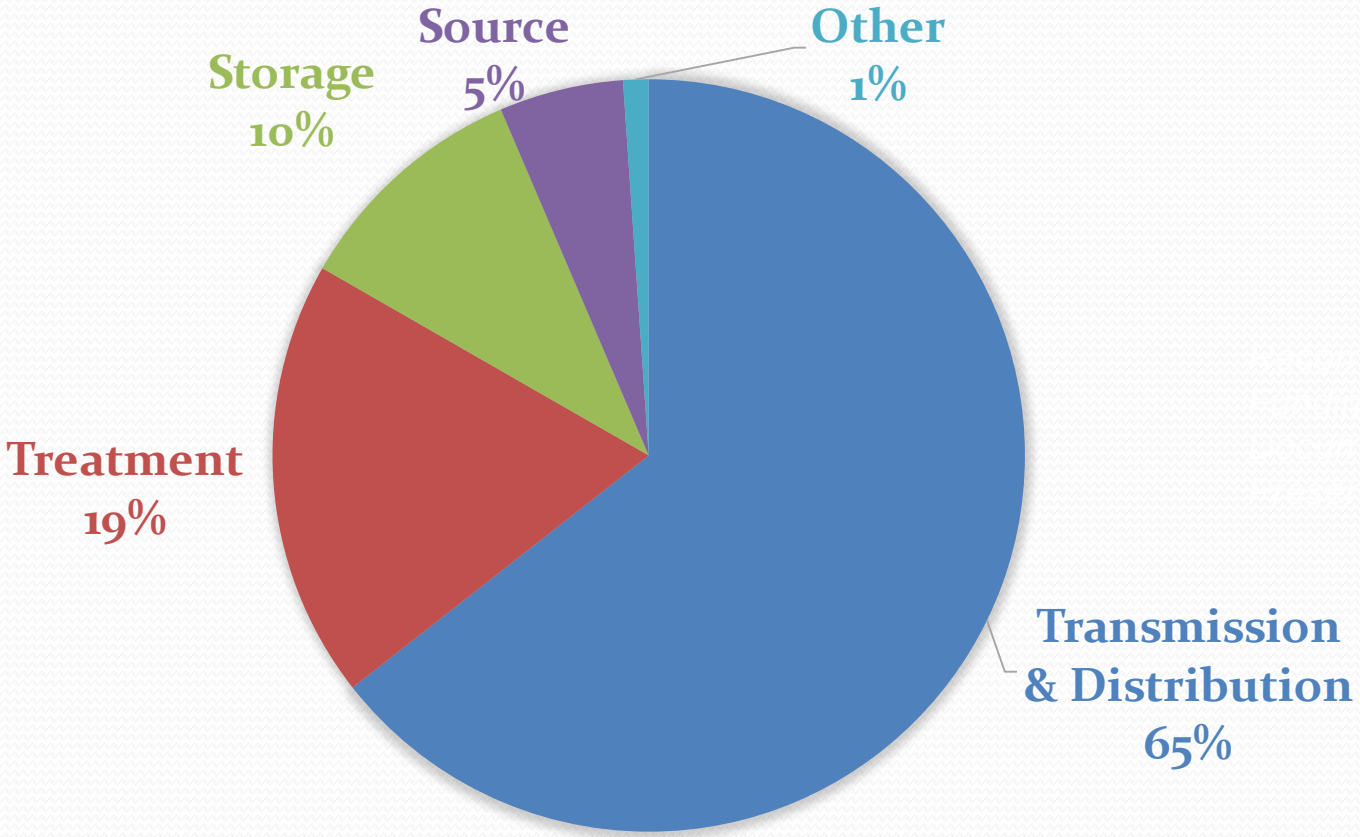
20-Year Drinking Water Infrastructure Needs Assessment (2011-2030)*

System Size and Type	Population	20-Year Total $ billions
Community Water Systems		
Large	>100,000	$145.10
Medium	3,301-100,000	$161.80
Small	< 3,300	$64.50
Other Systems		$12.80
Total		**$384.20**

Drinking Water Infrastructure Needs Survey and Assessment (April 2013), US EPA

*Includes projects related to new infrastructure, rehabilitation, expansion and replacement of existing infrastructure. Excludes improvements for population growth and operation and maintenance costs.

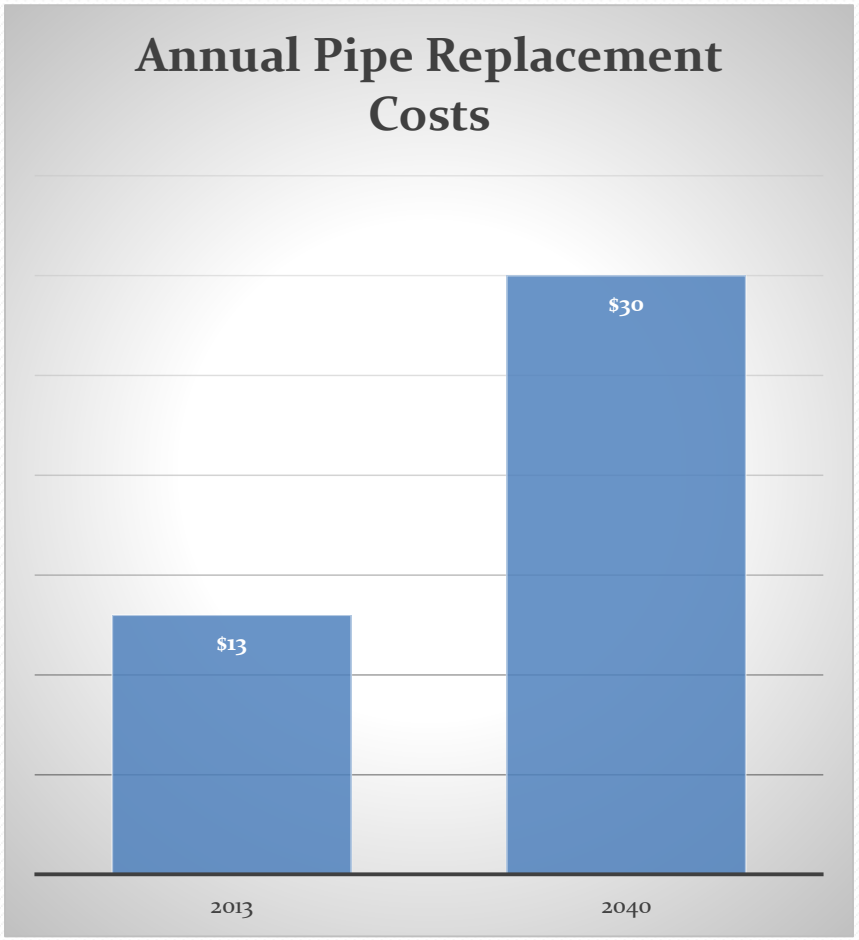
Drinking Water Needs by Infrastructure Type



Drinking Water Infrastructure Needs Survey and Assessment (April 2013), US EPA

2013 Report Card for America's Infrastructure (ASCE*)

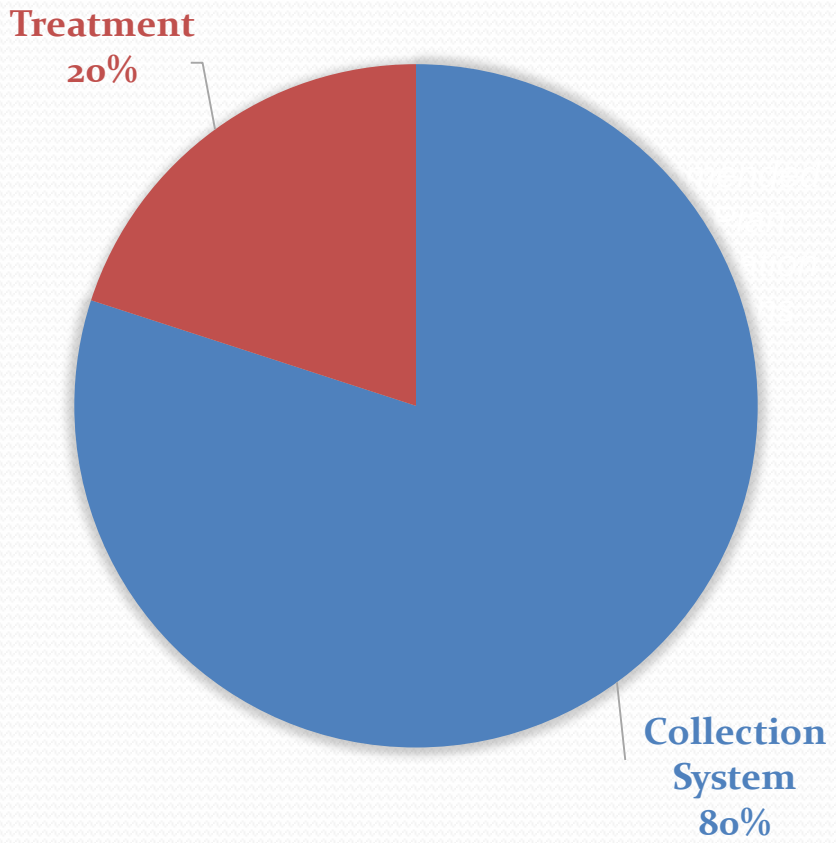
- Drinking Water
  - 1 million miles of water mains
  - 240,000 main breaks per year
  - 6 billion gallons of water lost daily (14%)
  - Water line replacement costs more than double in next 25 years



*American Society of Civil Engineers

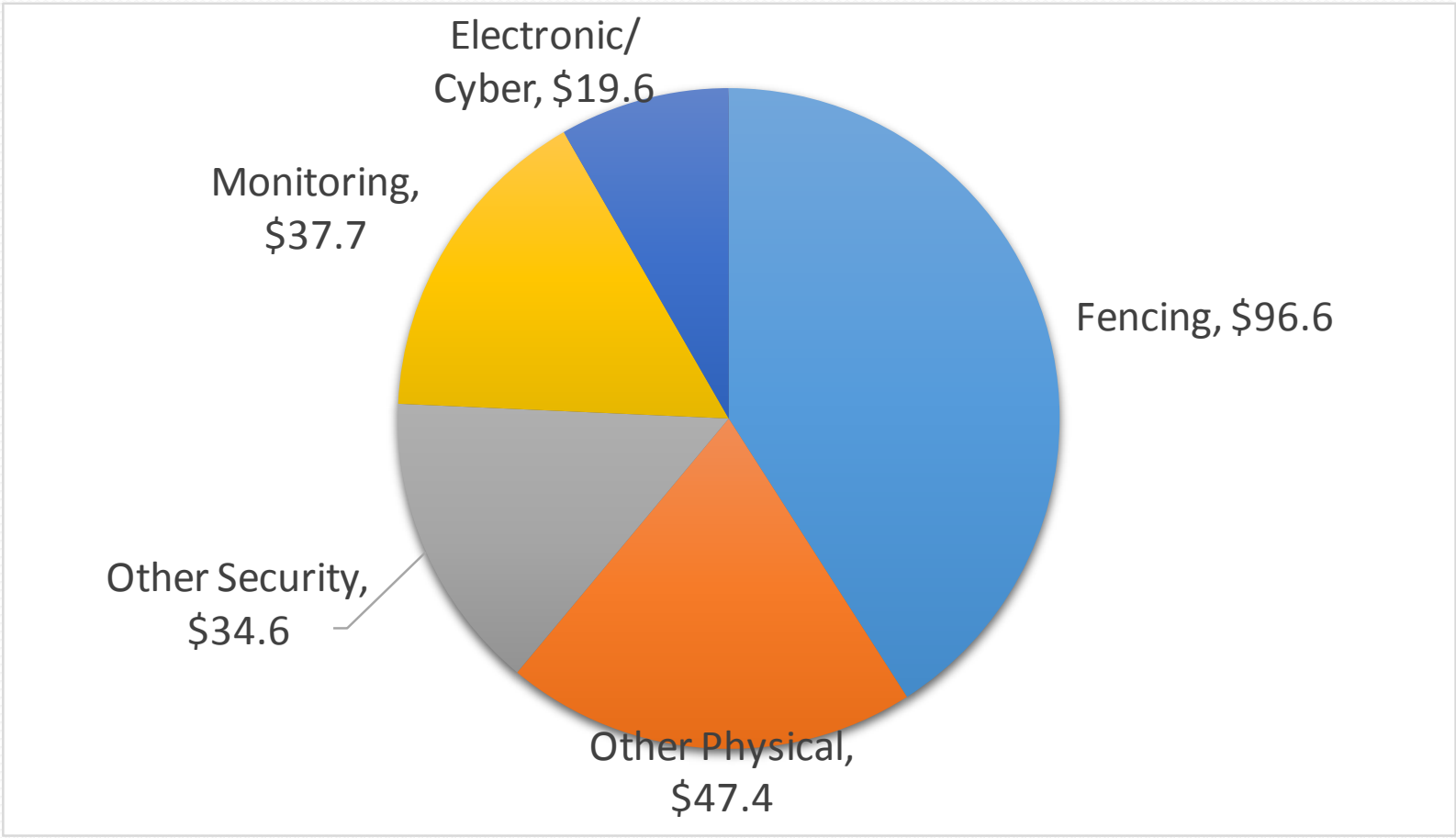
2013 Report Card for America's Infrastructure (ASCE*)

- Wastewater & Stormwater
  - 800,000 miles of sewer mains
  - Total needs = $298 billion (20 years)



*American Society of Civil Engineers

*Drinking Water Security Needs ($235.9 billion)**

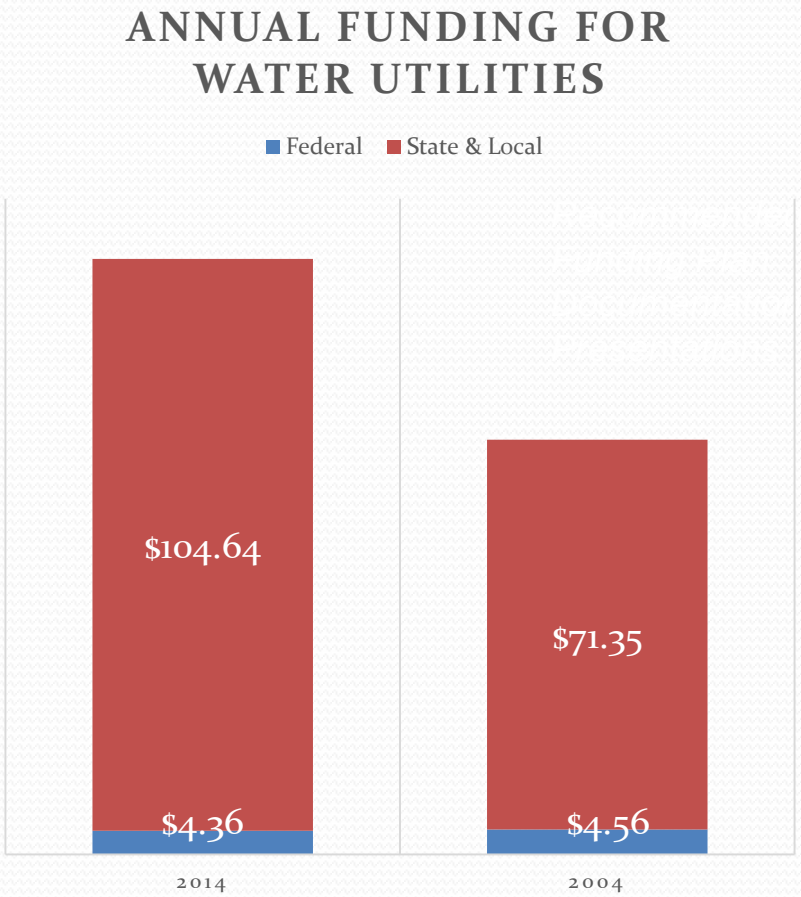


*2002 Public Health Security and Bioterrorism Preparedness and Response Act requires systems >3,300 population to prepare vulnerability assessments

Drinking Water Infrastructure Needs Survey and Assessment (April 2013), US EPA

Funding Challenges

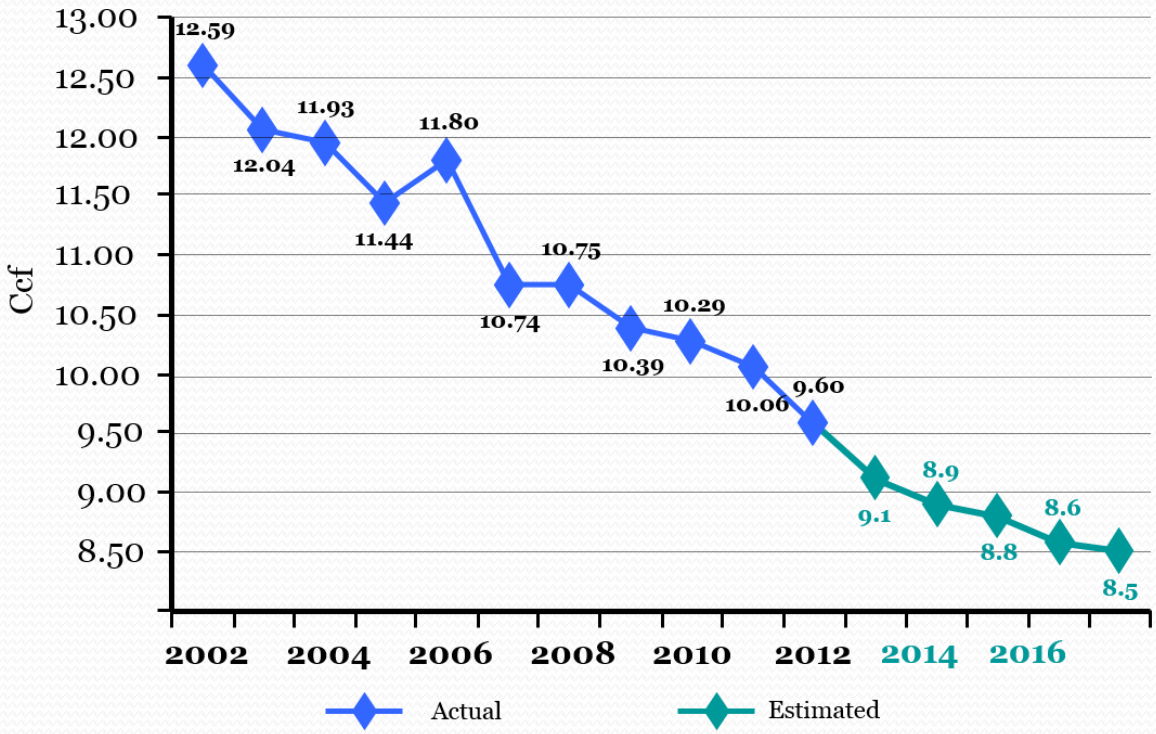
- Decreased federal support
- Credit market risks
  - Credit ratings
  - Interest rates
- Consumption decline
- Ratepayer resistance



*Congressional Budget Office

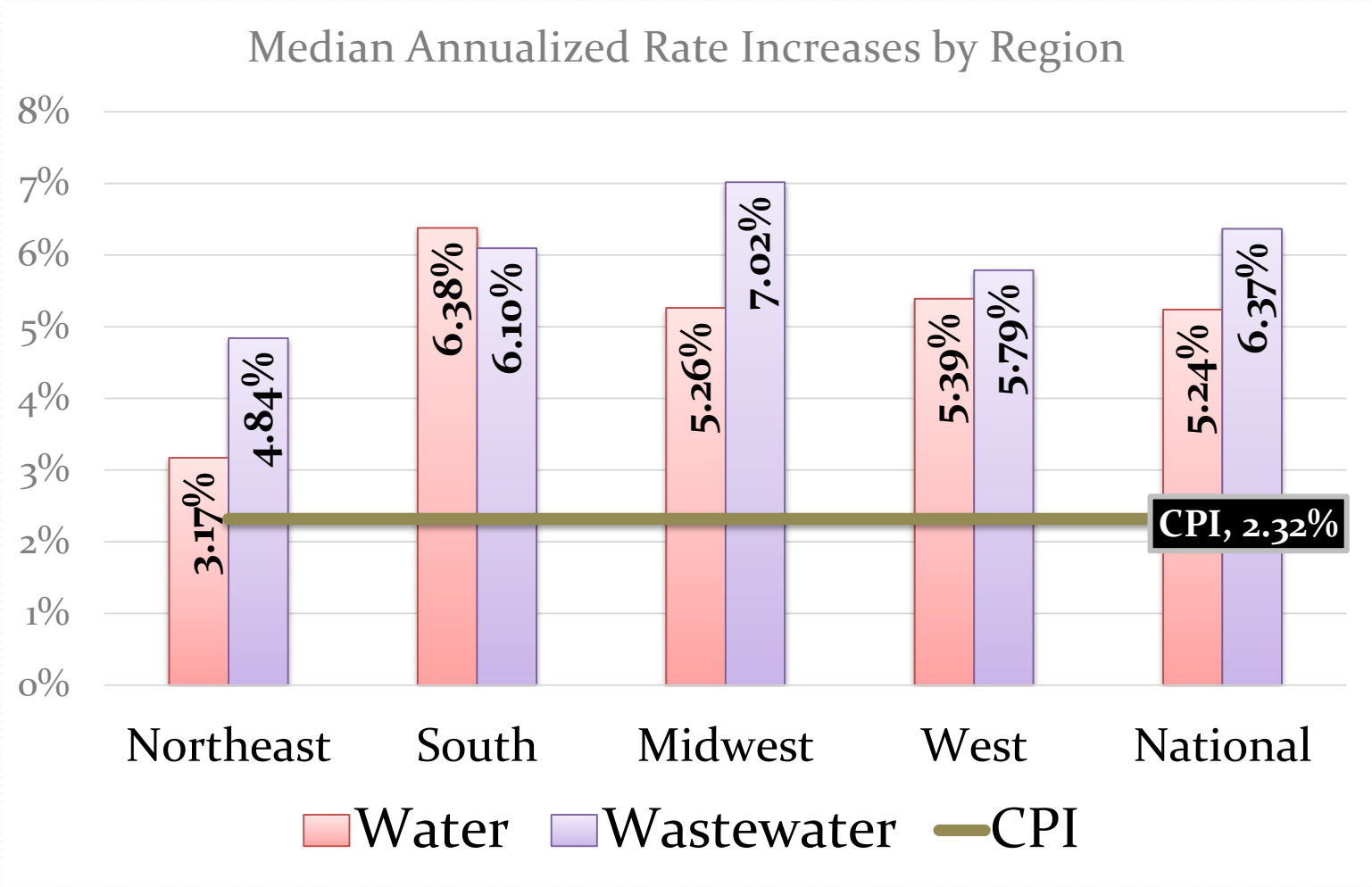
Consumption Decline

- National trend: 25% decrease between 2000 and 2012 150 gpcd - 112 gpcd (568-423 litres)
- Southwest City Example (31% decline in ccf per month per account):



gpcd = gallons per capita per day, ccf = hundred cubic feet

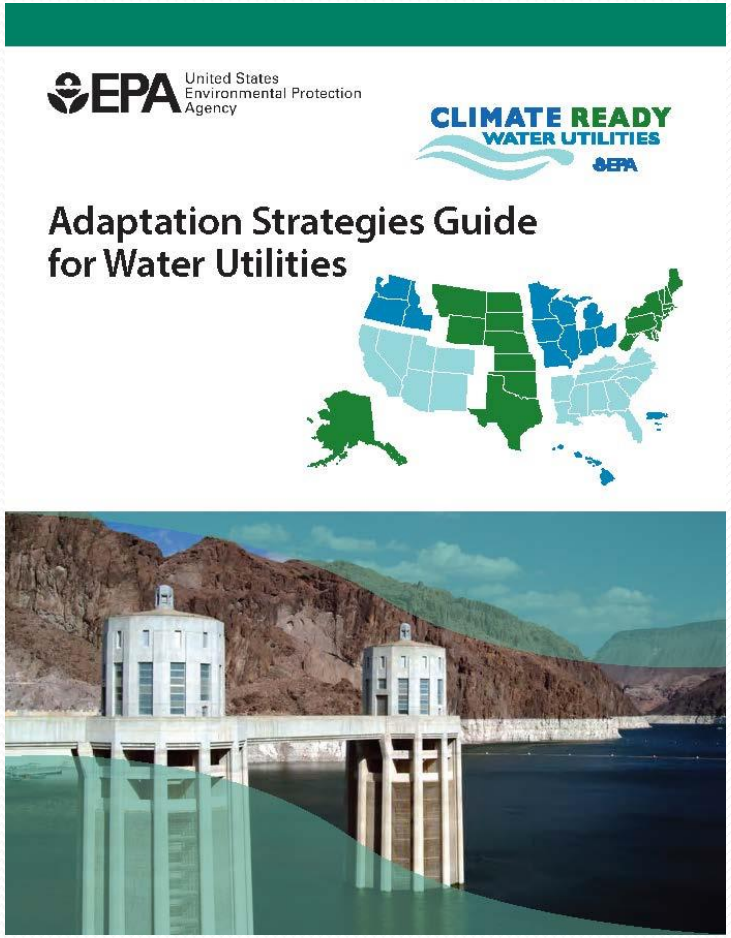
Tariff Increases Outpacing Inflation*



*2014 Water and Wastewater Rate Survey (American Water Works Association and Raftelis Financial Consultants

Climate Change

- Additional Costs
  - Short-term planning
  - Longer term resource adaptation
- Revenue instability
  - Extreme weather conditions



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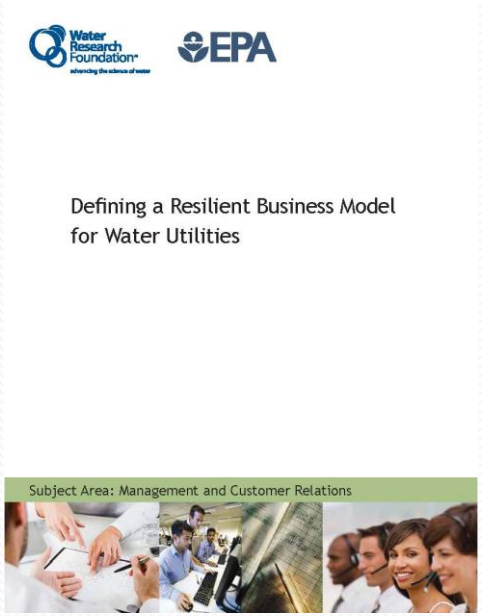
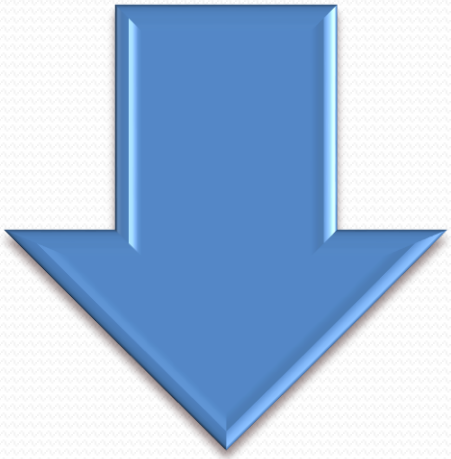
Strategies to Enhance Financial Sustainability

Risks and Opportunities



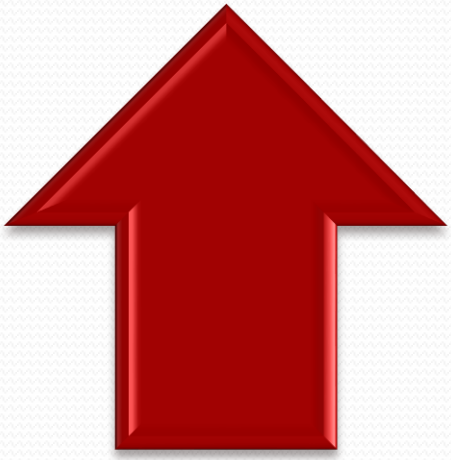


External Risks

- Planning and forecasting
- Tariff structures and composition

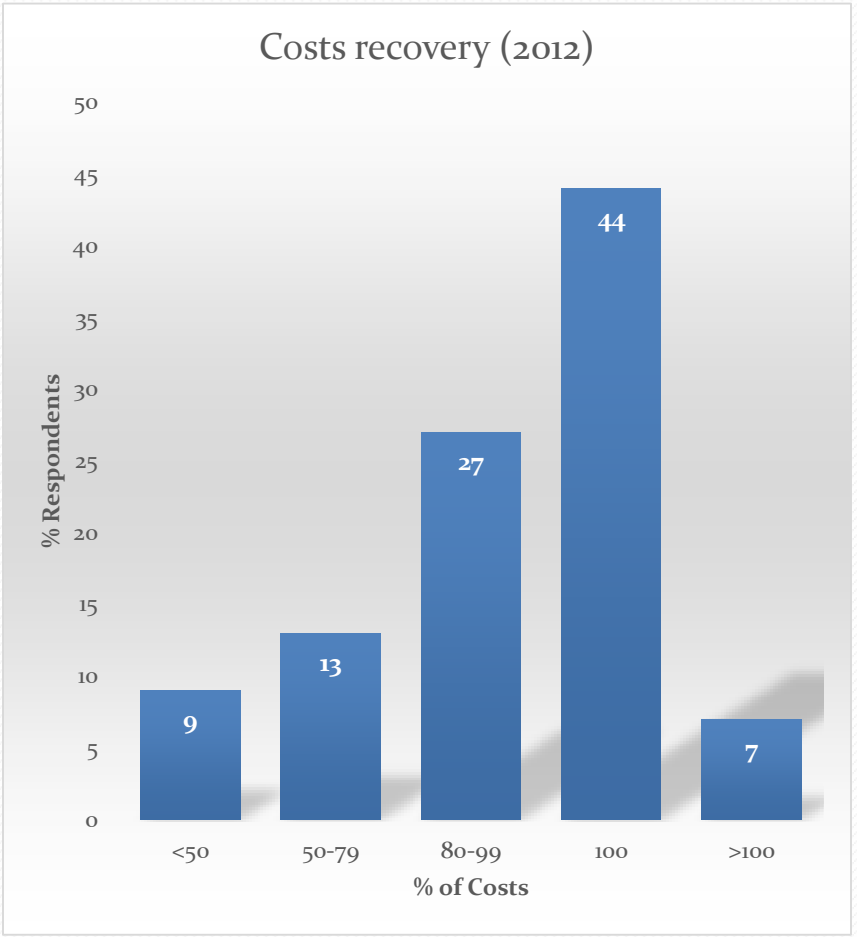
Internal Resilience

- Cost recovery
- Credit management



Full Cost Recovery: Tariffs

- Tariff levels
  - Price indexing
  - Marginal cost pricing
- Tariff surcharges
  - Environmental
  - Security
  - Repair & replacement
  - Drought



*2012 State of the Water Industry Report (Journal AWWA, Murphy, Maripat)

Cost Recovery Enhancements

- New fees and charges
  - Antenna leases on water towers
  - Bottled water sales
- On-site energy production
- Customer assistance programs

Managing Credit Factors

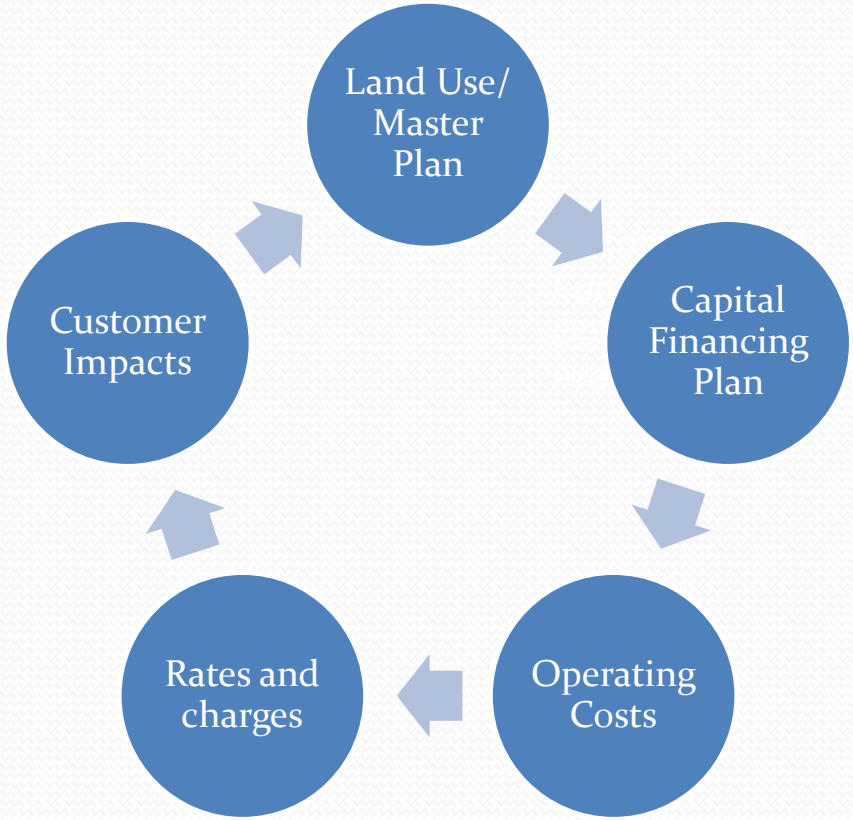
- Rate increase history
- Revenue recovery
  - Minimum 30% fixed
- Financial performance metrics

Key Water and Sewer Utility Ratios

Liquidity:	**Strong**	**Good**	**Adequate**	**Low**
Cash and Investments On Hand (days)	>120	60 - 120	30 - 60	<30
Financial Operations:	**Strong**	**Good**	**Adequate**	**Insufficient**
Debt Service Coverage (x)	>1.50x	1.26x - 1.50x	1.0x - 1.25x	<1.0x

Planning and Forecasting

- Coordination of facility and financial Planning
- Asset management
- Consumption forecasting
  - Challenge historical assumptions
  - Understanding price elasticity
  - Improved meter technology



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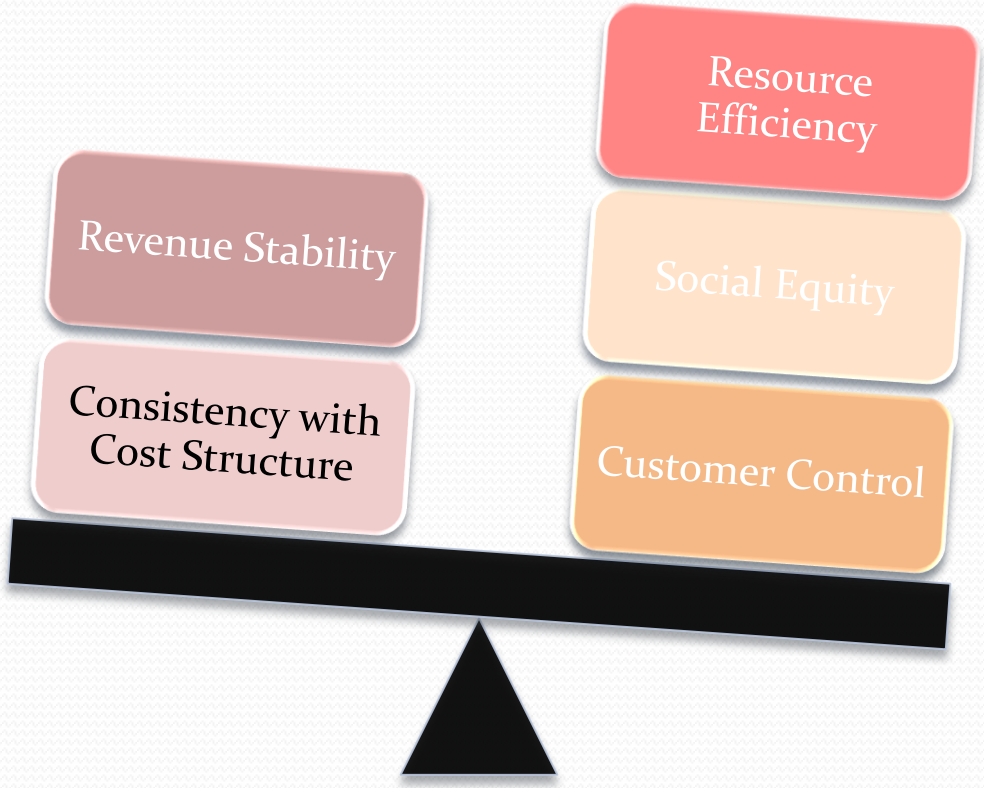
Re-Balancing Tariff Pricing Objectives

"Pay for Availability of Service"

"Pay for What You Use"



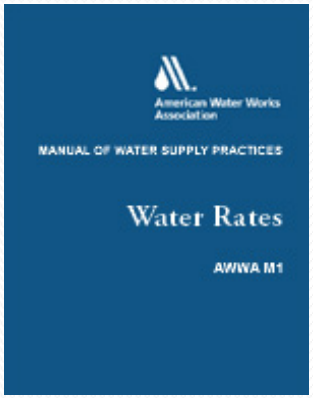
Fixed Charge Cost Recovery

Water System Fixed Costs (75-85%)

Historical Cost Recovery <25%

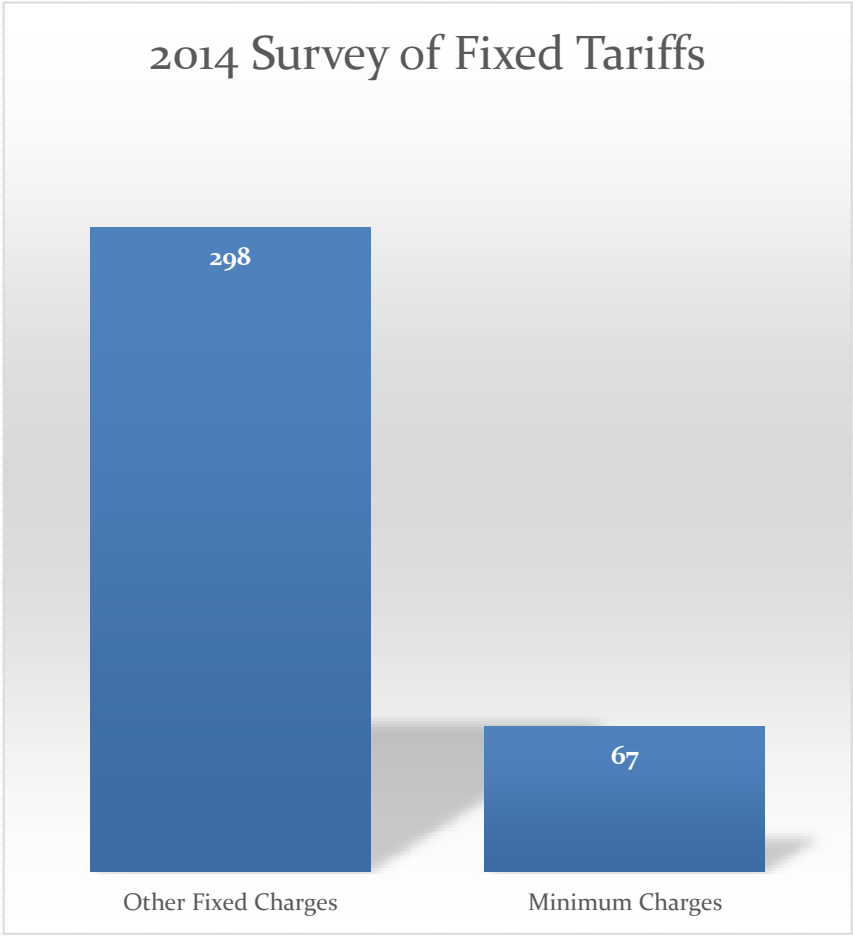
Target Cost Recovery 25-50%

Standard Service Charges			**“Availability to Serve” Charges**		
Customer Service	Meter Repair/ Replace	Billing/ Education	Distribution Maintenance	Public Fire Protection	Debt Service



Traditional Fixed Charge Structures

- Customer/billing
  - Uniform by customer
- Meter-based
  - Increase with size of meter
- Minimum Charges
  - Include pricing of minimum quantity



*2014 Water and Wastewater Rate Survey (American Water Works Association and Raftelis Financial Consultants

Consumption-Based Fixed Charges

- Base Charge reflective of individual consumption
  - Peak season (prior year)
  - Real-time (end of rate period)
- Advantages
  - Balance revenue stability with equity and conservation
- Disadvantage
  - Administrative burden
  - Lag in price signal

Fixed–Fixed
Meter installation and reading
Fire protection services
Administrative/billing costs
Fixed-Volumetric
Purchasing water rights
Planning and environmental costs
Water mains, pipelines, tanks, and wells
Building/maintaining treatment facility
Variable
Water purchases
Pumping costs
Water treatment costs

*2012 State of the Water Industry Report (Journal AWWA, Murphy, Maripat)

Fixed Charge Tiers

- City of Austin, Texas
- Based on customer water use (prior 12 months); applies in addition to meter charges

Single-Family Residential	
0-2,000 Gallons	$2.00
2,001-6,000 Gallons	$4.50
6,001-11,000 Gallons	$7.45
11,001-20,000 Gallons	$12.55
20,001 – over Gallons	$12.55

Source: The Price of Water 2013 (Circleofblue.org)

Peak-Set Fixed Charges

- Similar to electric utility peak charges
- Fixed charge based on 3-year rolling average of customer's use ("peak" month)

	Prior Tariff Structure	Peak-Set Base Tariff Structure
% fixed annual revenue	18%	57%
Fixed Charge	$6.00 per meter	$1.85/1,000 gallons X Peak Base Volume
Volume (Variable) Charge	$3.46/1,000 gallons X actual month volume	$0.52/ 1,000 gallons X actual month volume

Source: Defining a Resilient Business Model for Water Utilities (Water Research Foundation #4366)

Customer Assistance Programs

- Regulatory threshold
  - 2.5% median household income
- Lifeline rates
- Targeted Programs
  - Income qualifying
  - Discounts to fixed/volume charges
- Conservation programming

*

Public Outreach: Messaging

"You're paying for the ability to receive water, whether you use it or not"

Contact

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