

Upstream with a Paddle



Water System Partnerships

Cooperative Approaches to
Drinking Water Challenges

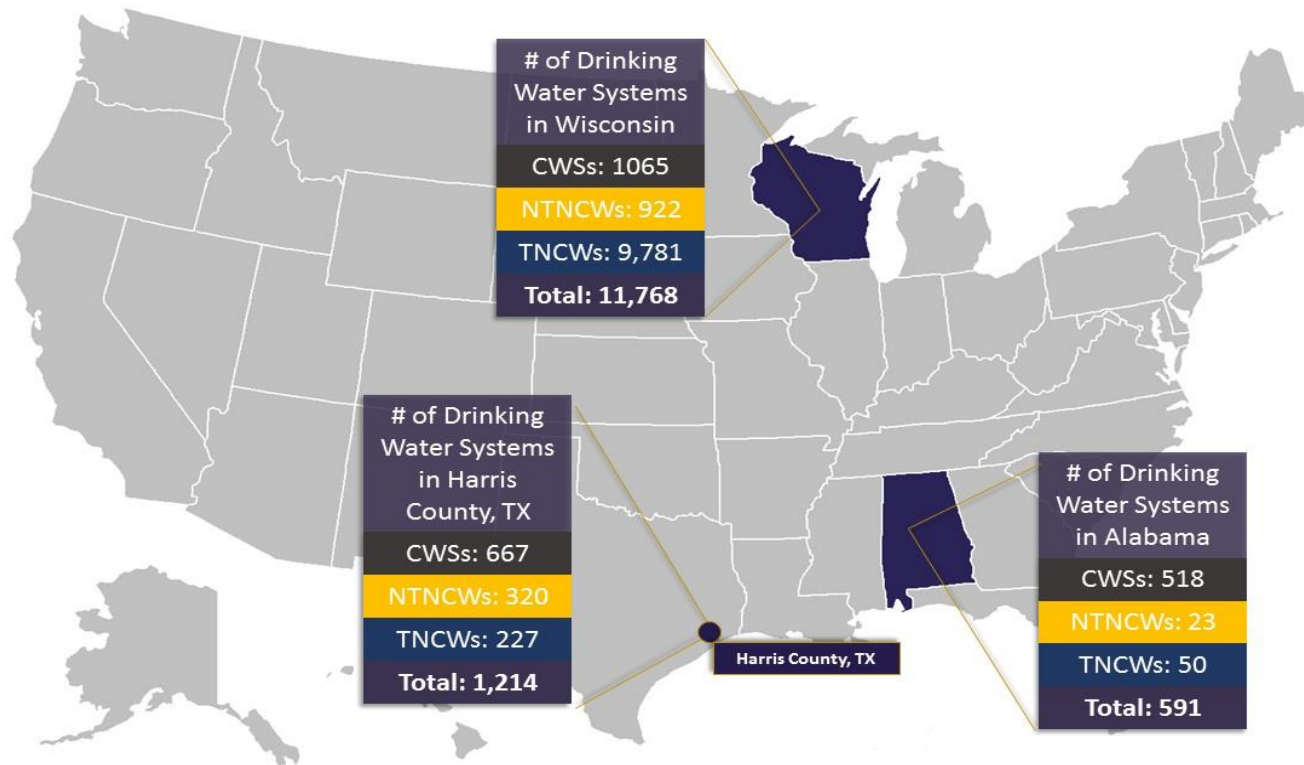
Ellen Tarquinio, U.S. EPA
Tarquinio.Ellen@EPA.GOV

Inventory & Compliance Data on Small Public Water Systems

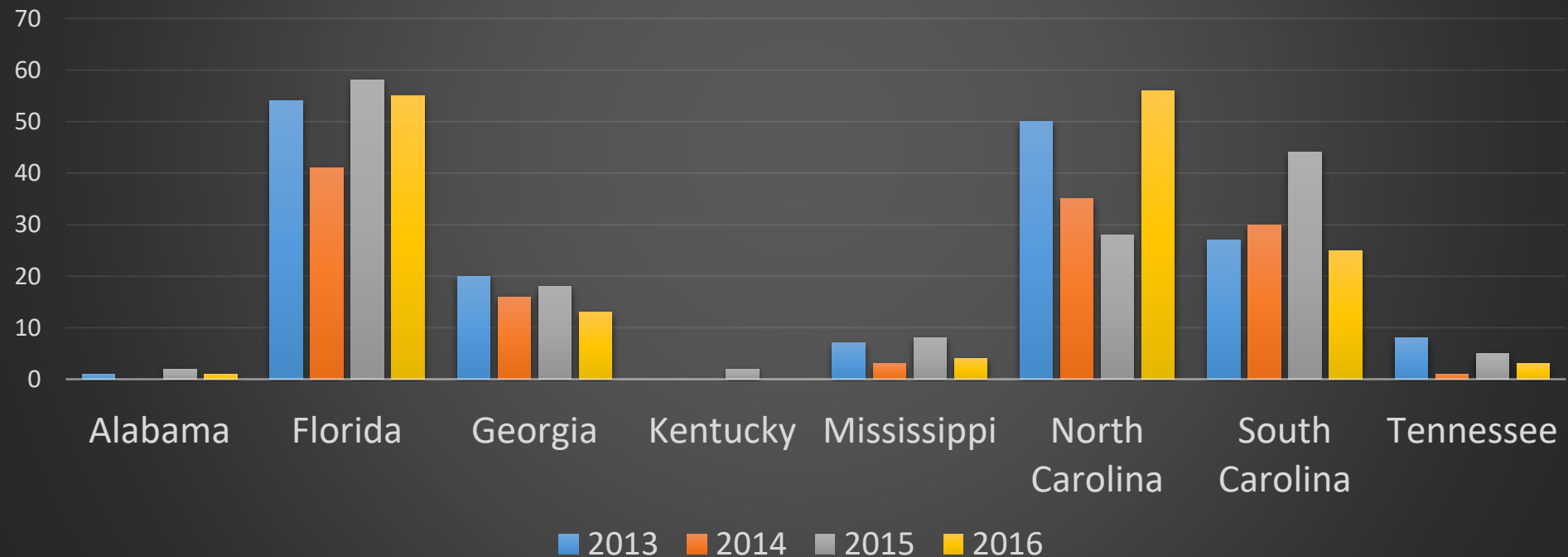
- 91% of all community water systems serve 10,000 persons or less.
 - 55% of all community water systems serve 500 persons or less.
 - 24% of all community water systems serve 100 persons or less.
- 94% of all non-community water systems are 500 persons or less.
 - 68% of all non-community water systems are 100 persons or less.



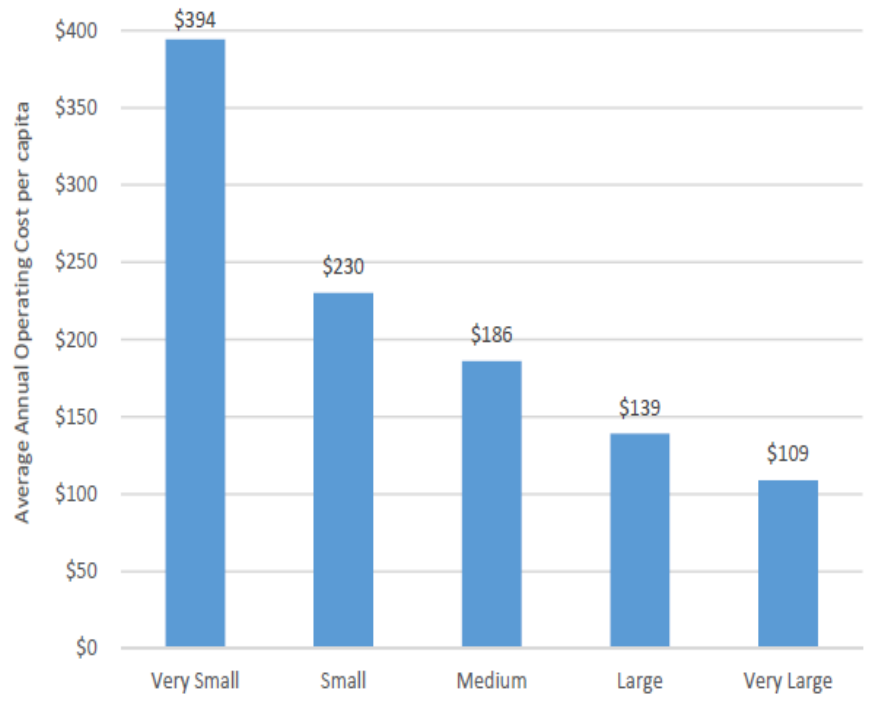
Inventory of Drinking Water Systems in FY2016



New DW Systems 2013-2016



Average Annual Operating Costs Per Capita

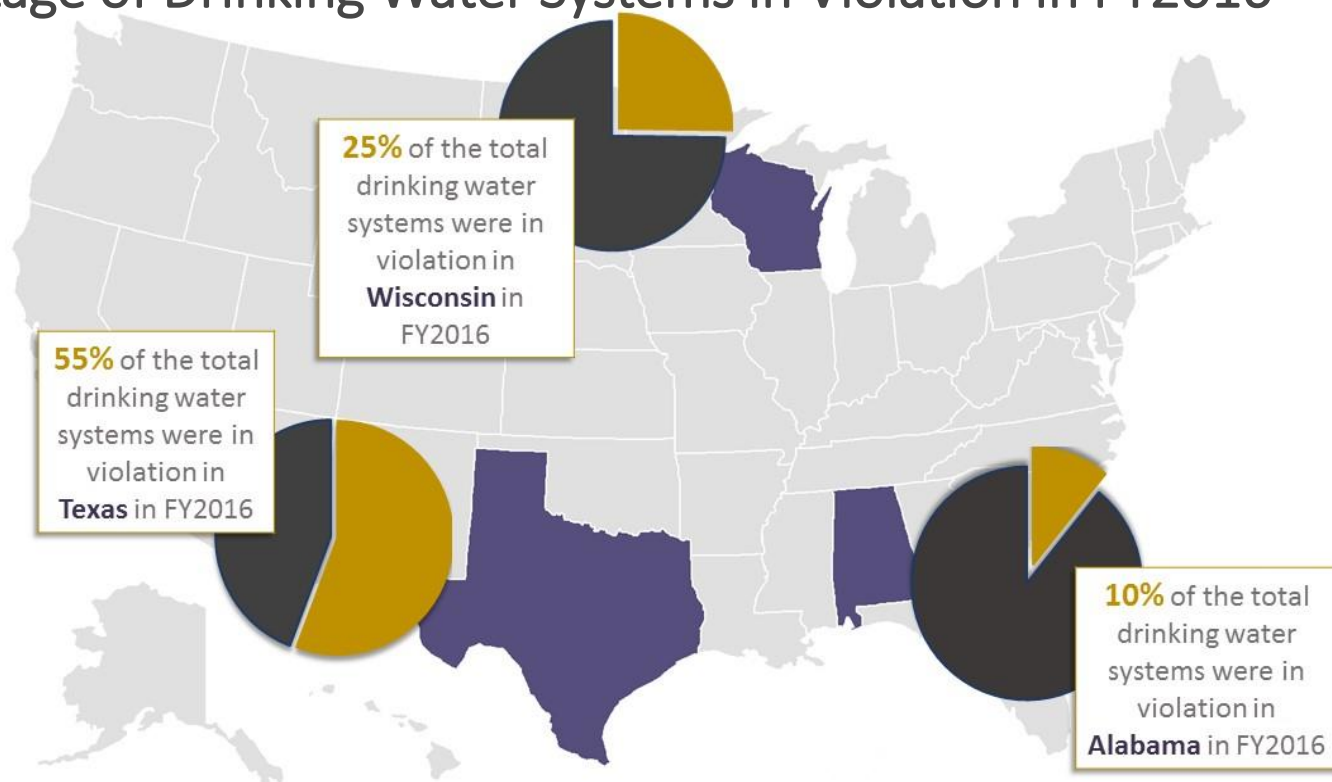


Possible Operating Expenses

- Personnel
- Purchased Water
- Utilities
- Repairs/Maintenance
- Supplies
- Admin/Insurance
- Miscellaneous
- RD Loan Payment
- Depreciation



Percentage of Drinking Water Systems in Violation in FY2016



Movement Toward Partnerships

- **High expectations** on the part of the public for safe drinking water for everyone.
- **Water systems need** a high level of technical, managerial, and financial capacity to meet all of their obligations.
- **Need for leveraging** limited/diminishing resources.
- **Technology** to allow system to work in more informal partnerships and to partner with geographically remote systems.



Water System Partnerships: EPA Actions

Increasing awareness

Creating a space where communities can easily find support for partnerships

Identifying opportunities to address technical, managerial and financial capacity needs

Developing case studies, incentives and funding and financing tools to support water system partnerships



Revised Water System Partnerships Webpage

<https://www.epa.gov/dwcapacity/water-system-partnerships>



Water System Partnerships: State Programs and Policies

Water System Partnerships Case Studies

Water System Partnerships Resources

WATER SYSTEM PARTNERSHIPS

Key Case Studies

Types of Partnership



Informal
Cooperation



Contractual
Assistance



Joint Power
Agency



Ownership
Transfer



Multifaceted
Restructuring

Instructions

Small Drinking Water Systems Contract with a Shared O&M Program for Management Assistance

Community/Utility Name: Program of Shared Operation and Management (POSOM) in Florence, MT

Summary: In Florence, MT, the Midwest affiliate of the Rural Community Assistance Program (RCAP) set up a POSOM to help meet the needs of very small systems that are staffed by volunteers. The systems contract with the POSOM for operation, maintenance, and compliance needs.

Key Benefits: Economies of scale; reduced operating cost; improved expertise

Funding for Partnership: Monthly or annual contracting payments to POSOM

Key Players: RCAP; POSOM in Florence, MT



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AMERICAN WATER

Policy Solutions to Water Industry Fragmentation in the United States

Deborah Dewey

President

Indiana American Water

Challenges Facing Communities



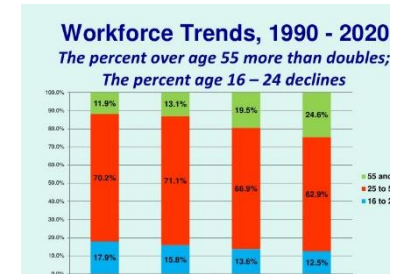
Quality



Resiliency



Sustainability



Workforce

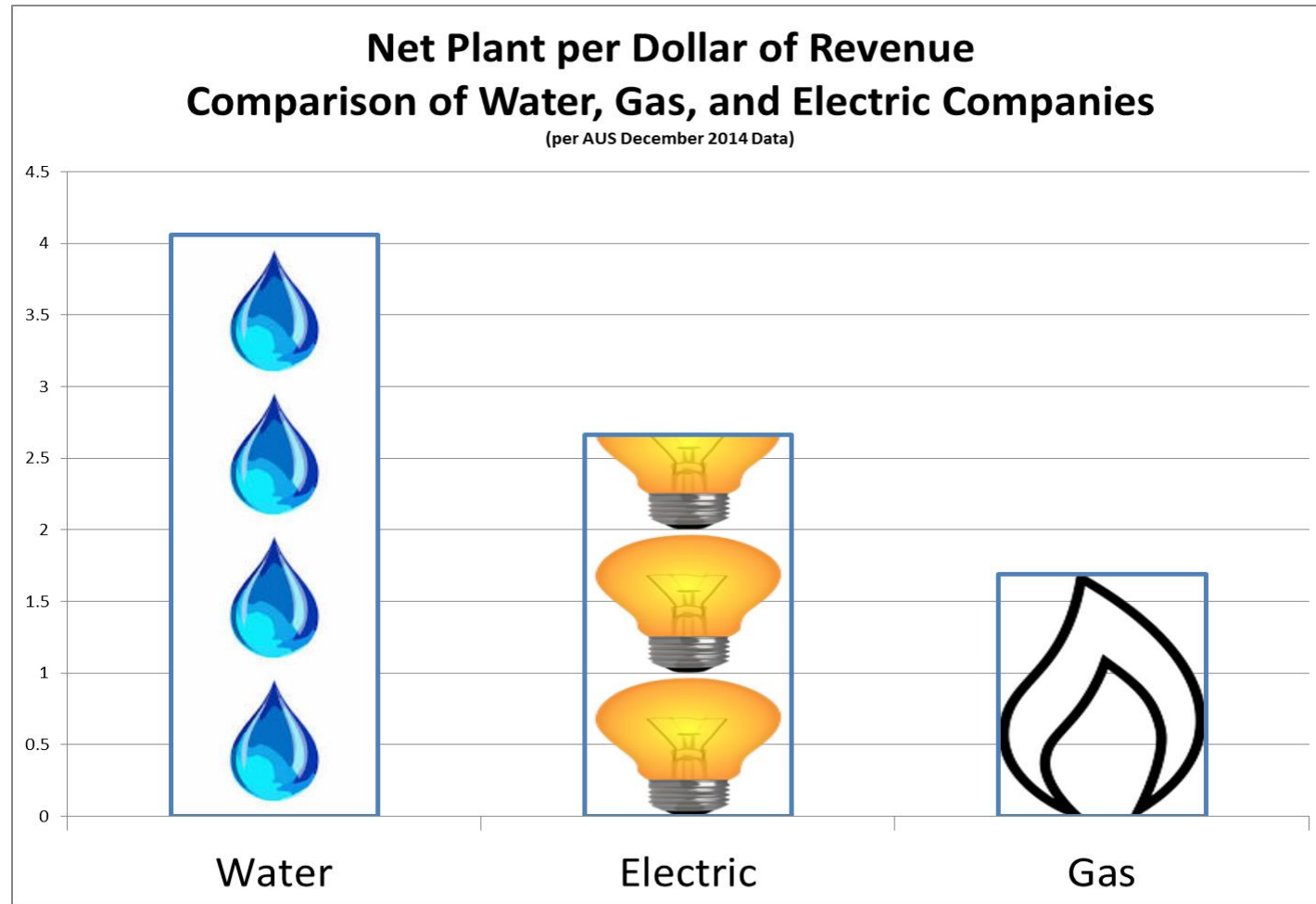


Age

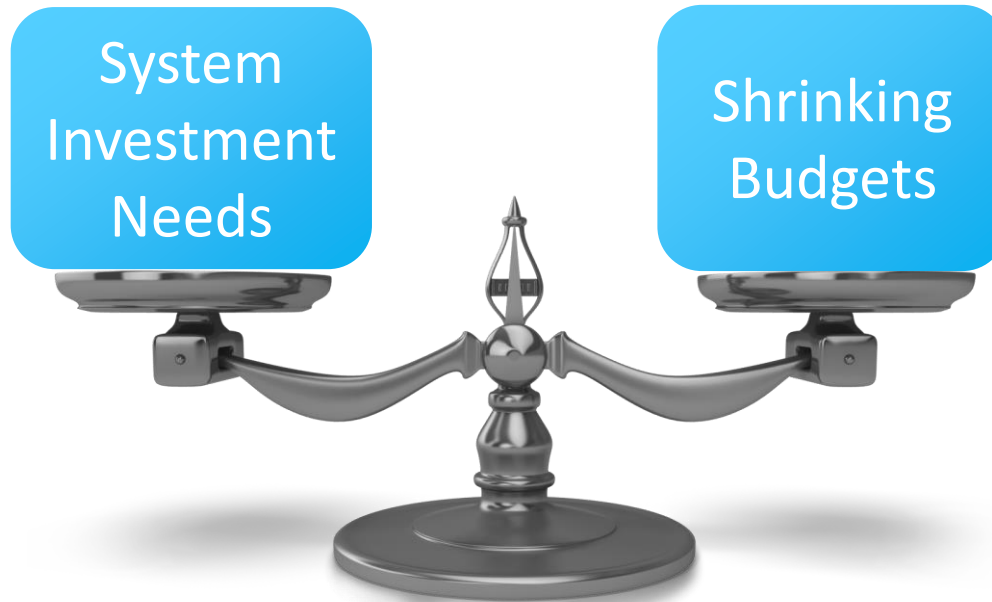


Affordability

Water is the most capital intensive utility

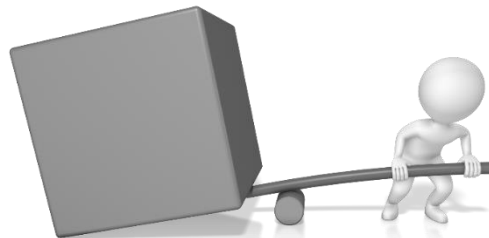


A Challenging Situation



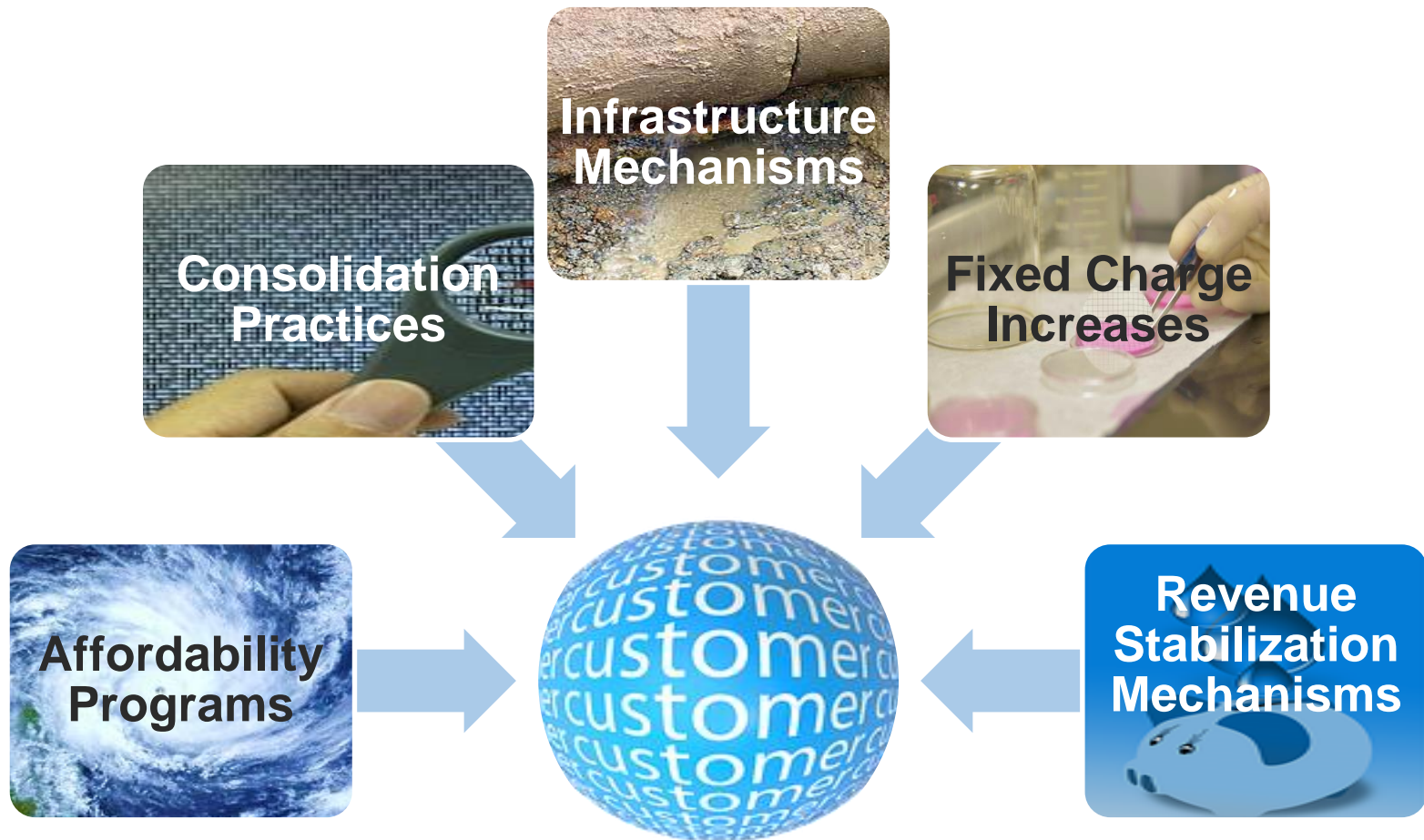
What Can Help Us Do More....

Support for Consolidation
with Regional Approach

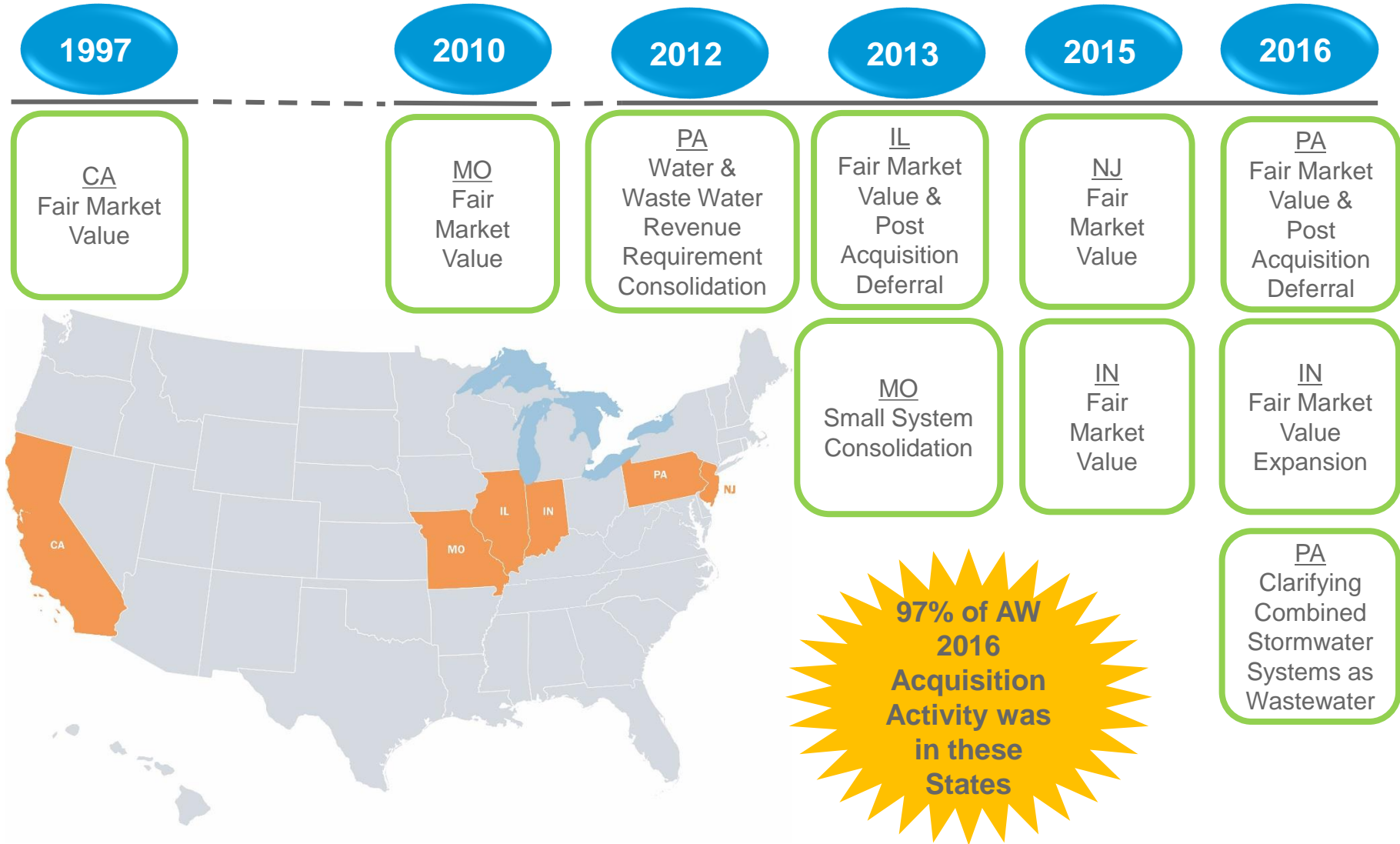


Constructive Legislation
and Regulation

Legislative/Regulatory Policy Trends



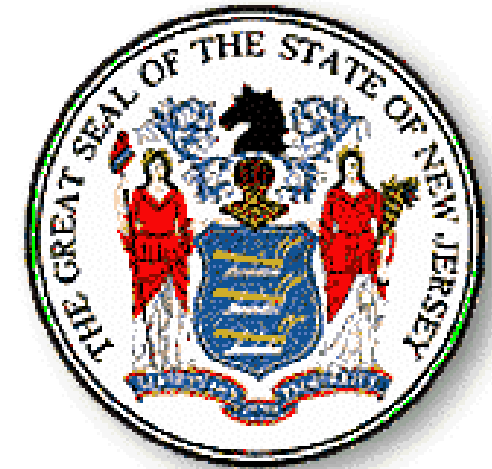
Evolution of System Consolidation Legislation in AW States



New Jersey

Water Quality Accountability Act

- To ensure safety and reliability of the state's drinking water
 - Early detection of water quality issues
 - Transparent reporting
 - Making needed infrastructure investments

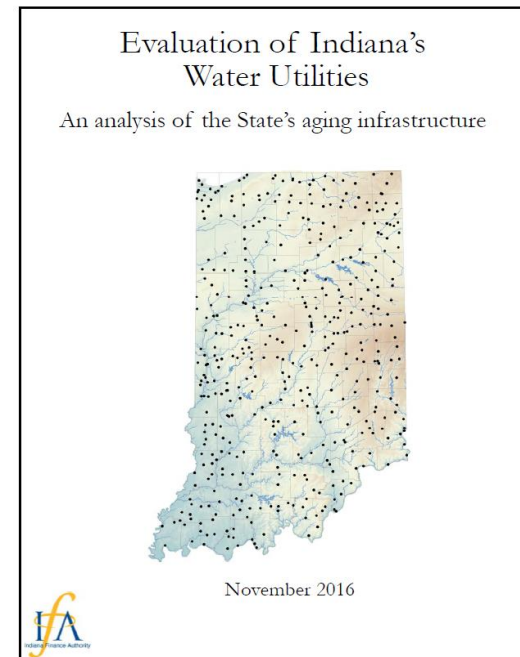
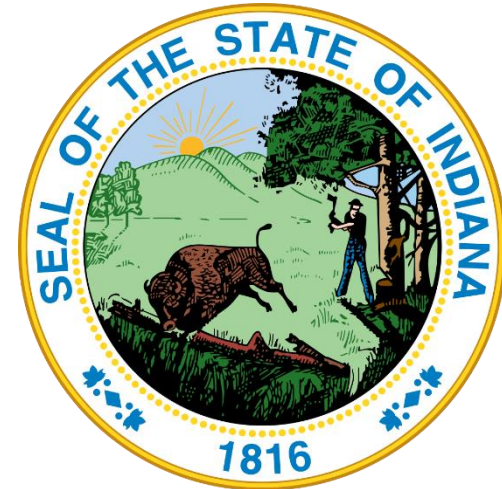


Key requirements:

- Field testing of valves and hydrants
- Cybersecurity program
- Action plans for Notices of Violation (NOVs)
- Asset management plan; minimum 150-year replacement cycle
- Written certification from Corporate Officer, Executive Director or Mayor

Indiana

- **Situation**
 - Property tax caps
 - Increased attention for local balanced budgets
- **Justification**
 - Indiana Finance Authority (IFA) Studies
- **Policy**
 - Distressed Utility Legislation
- **Impact**
 - Encourages regionalization
 - Monetizes full asset value
 - Streamlines process for approval
 - Gives clarity and transparency to public review



Indiana Regional Approach Meeting Needs

- **Community #1 – Water and Wastewater Systems (1,250 customers each)**
 - Need investment for wastewater of > \$5M
 - Forecasting 105% rate increase
 - Consolidation with INAW
 - ◆ 30% wastewater rate increase wastewater
 - ◆ 5% water rate decrease water
 - \$6M fund for other projects/grant matching after debt retired
- **Community #2 – Water System (1,300 customers)**
 - Consolidation with INAW; > 40% rate decrease
 - Nearly \$6M fund for other projects after debt retired
- **Community #3 – Water System (3,300 customers)**
 - Community operating in the red; no balanced budget
 - Consolidation with INAW; 5% rate decrease
 - Nearly \$10M after debt retired to address fiscal problems

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Consistent Enforcement Standards



Consolidated Tariffs



Combined Water and Sewer



Regional Approach to Service



Revenue Stabilization Mechanisms



Fair Market Valuation



Equal Access to Federal Funding

Legislative / Regulatory Policy Solutions



**Sustainability of Safe, Reliable, and Affordable
Water and Wastewater Systems**



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Atwater Thornton

The Role of Regulation in Funding Future Investment

Richard A. Verdi

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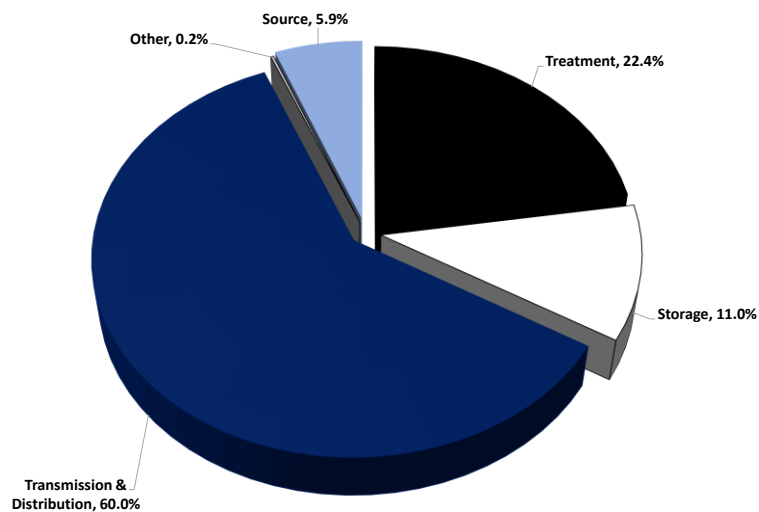
raverdi@atwaterthornton.com

National Association of Regulatory Utility Commissioners

November 14, 2017

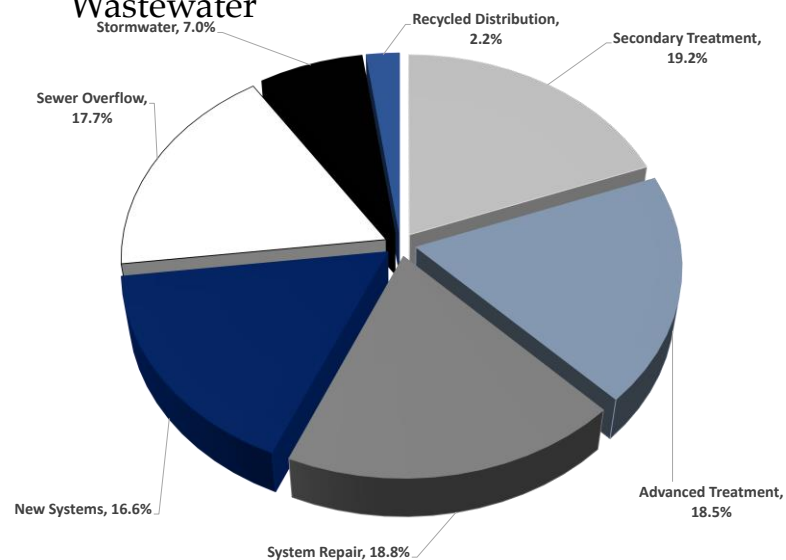
Breaking Down the Substantial Amount of Capital Required to Remedy Looming U.S. Water Crisis

Projected CapEx by Need -



Source: EPA

Projected CapEx by Need -
Wastewater



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ATWATER|THORNTON
Independent Water Nexus Equity Research

The Water Industry

Consulting/Engineering Services

AECOM	ACM
Chicago Bridge & Iron Co. NV	CBI
Clean Harbors, Inc.	CLH
Jacobs Engineering Group Inc.	JEC
Layne Christensen Company	LAYN
Tetra Tech, Inc.	TTEK

Water Rights

Cadiz Inc.	CDZI
Pure Cycle Corporation	PCYO
PICO Holdings, Inc.	PICO

Distribution (Utilities)

Artesian Resources Corporation Class A	ARTNA
American Water Works Company, Inc.	AWK
American States Water Company	AWR
Connecticut Water Service, Inc.	CTWS
Consolidated Water Co. Ltd.	CWCO
California Water Service Group	CWT
Global Water Resources, Inc.	GWRS
Middlesex Water Company	MSEX
SJW Group	SJW
Aqua America, Inc.	WTR
York Water Company	YORW

Infrastructure (Equipment & Technology)

Aegion Corporation	AEGN
Badger Meter, Inc.	BMI
CECO Environmental Corp.	CECE
CIRCOR International, Inc.	CIR
Crane Co.	CR
Franklin Electric Co., Inc.	FELE
SPX Flow, Inc.	FLOW
Flowserve Corporation	FLS
Forterra, Inc.	FRTA
Gorman-Rupp Company	GRC
HD Supply Holdings, Inc.	HDS
IDEX Corporation	IEX
Itron, Inc.	ITRI
ITT, Inc.	ITT
Lindsay Corporation	LNN
Mueller Industries, Inc.	MLI
Mueller Water Products, Inc. Class A	MWA
National Oilwell Varco, Inc.	NOV
Northwest Pipe Company	NWPX
Pentair plc	PNR
Roper Technologies, Inc.	ROP
Rexnord Corporation	RXN
Valmont Industries, Inc.	VMI
Advanced Drainage Systems, Inc.	WMS
Watts Water Technologies, Inc. Class A	WTS
Select Energy Services, Inc. Class A	WTTR
Xylem Inc.	XYL

Treatment

Calgon Carbon Corporation	CCC
Cantel Medical Corp.	CMD
DowDuPont Inc.	DWDP
Danaher Corporation	DHR
Ecolab Inc.	ECL
Energy Recovery, Inc.	ERII
Flexible Solutions International Inc.	FSI
General Electric Company	GE
Hawkins, Inc.	HWKN
IDEXX Laboratories, Inc.	IDXX
Stericycle, Inc.	SRCL
Thermo Fisher Scientific Inc.	TMO
AquaVenture Holdings Limited	WAAS
Waters Corporation	WAT

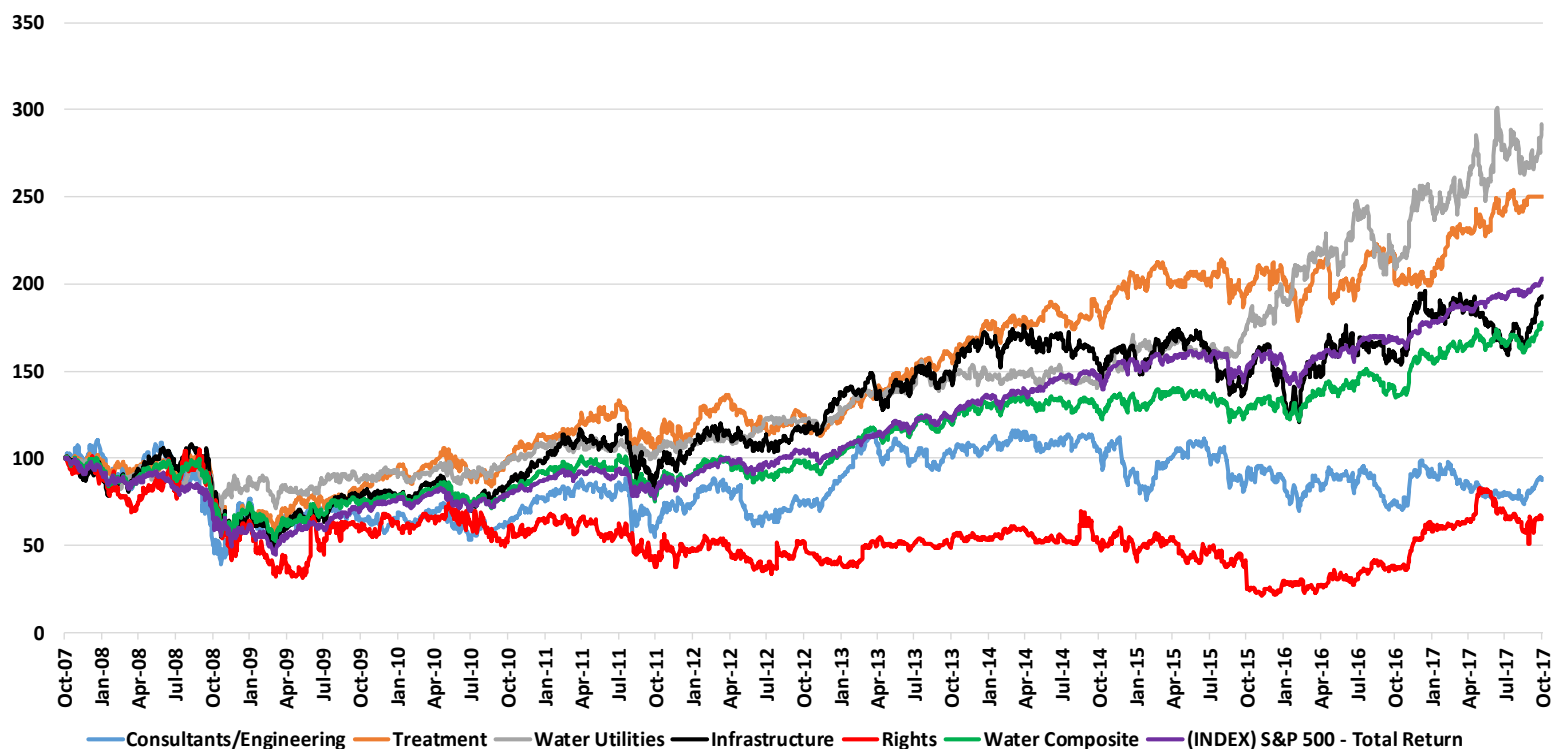
*Mention of specific companies is not a recommendation to buy, hold or sell any securities mentioned

Source: Atwater Thornton Equity Research

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Boring Water Utilities Offer Strong Returns

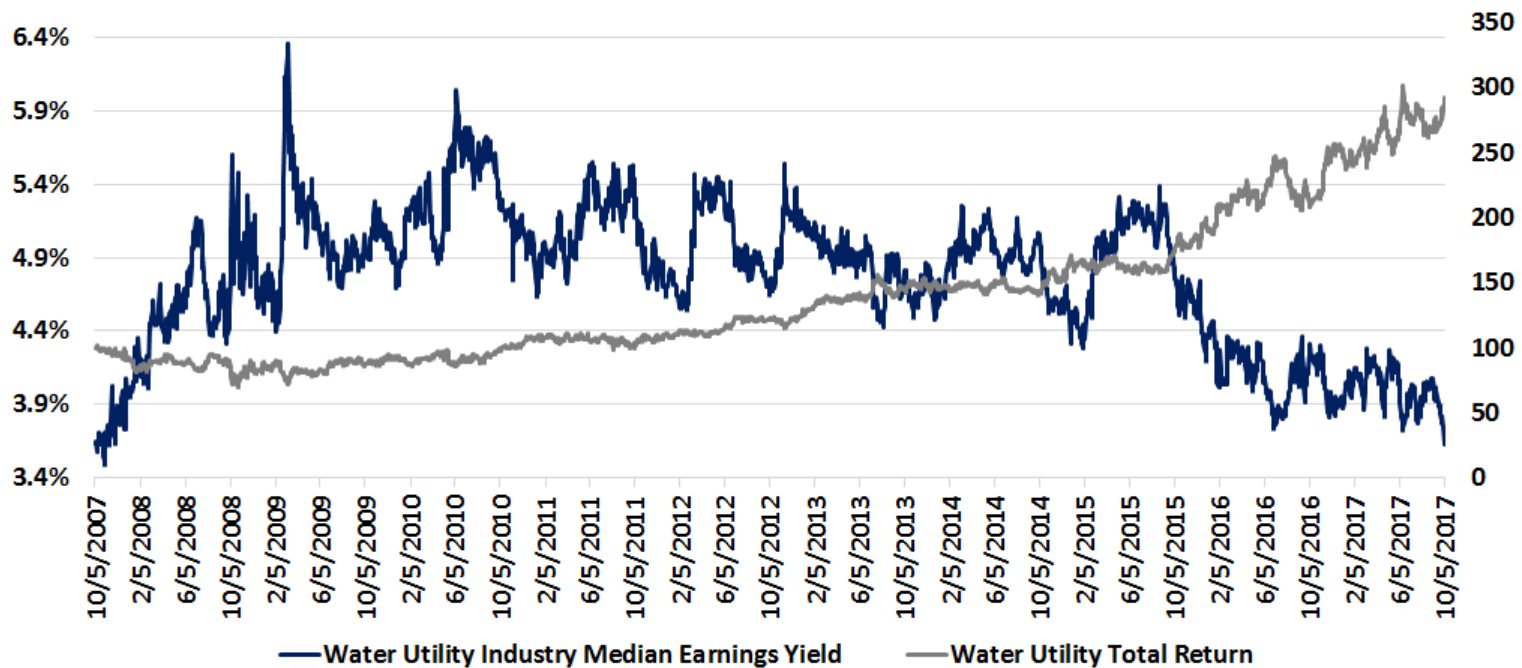


Source: FactSet, Atwater Thornton Equity Research

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Earnings Yield vs Return Implies Buying Lower P/E

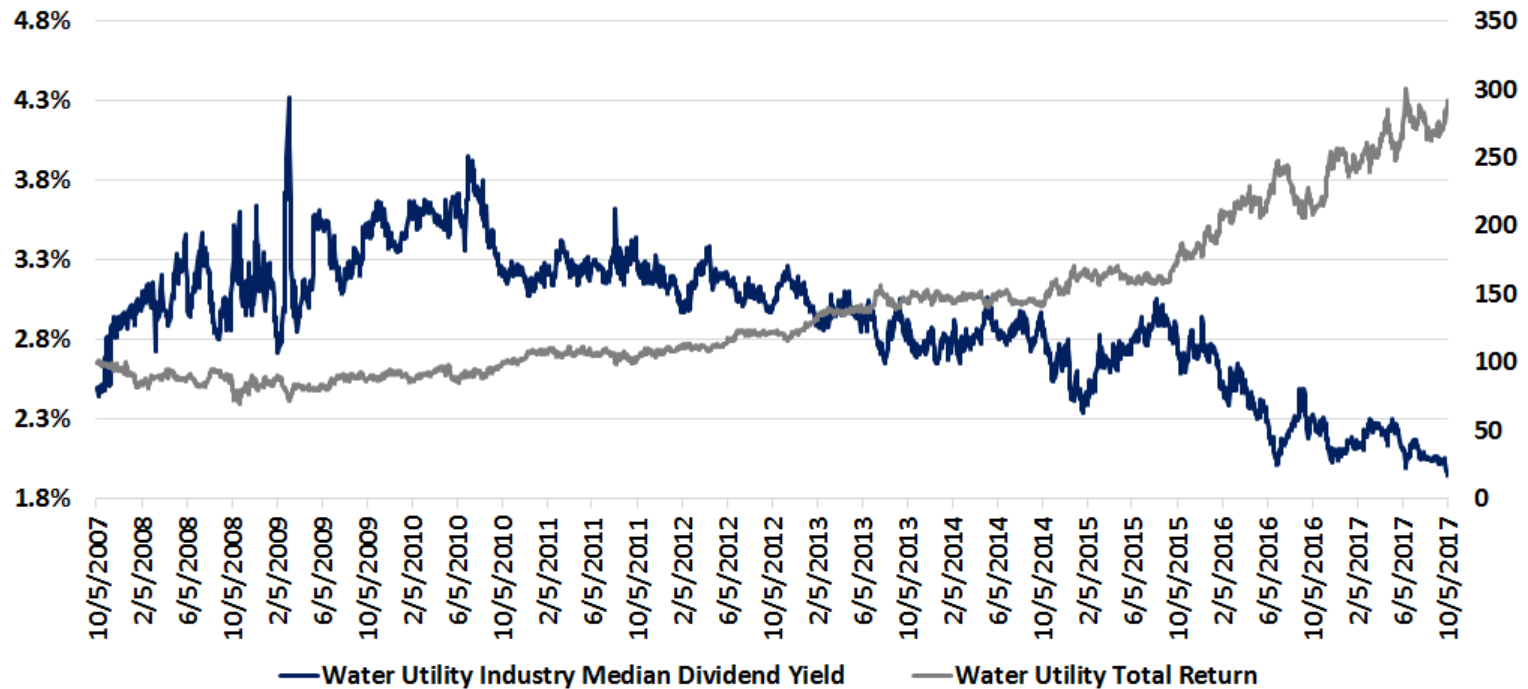


Source: FactSet, Atwater Thornton Equity Research

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Buy Higher Dividend Yield

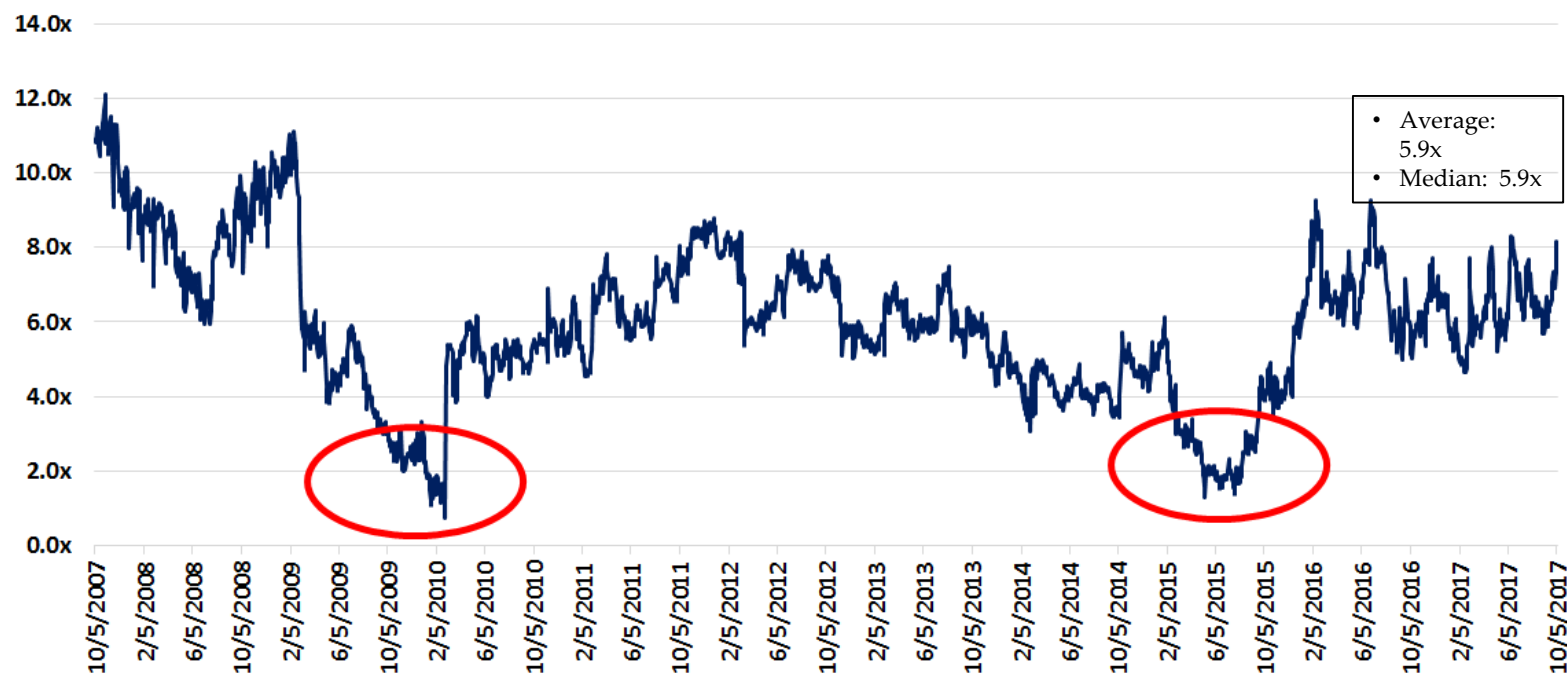


Source: FactSet, Atwater Thornton Equity Research

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Median Water Utility Industry Historic Premium to S&P 500 P/E Multiple (FY1)



Source: FactSet, Atwater Thornton Equity Research

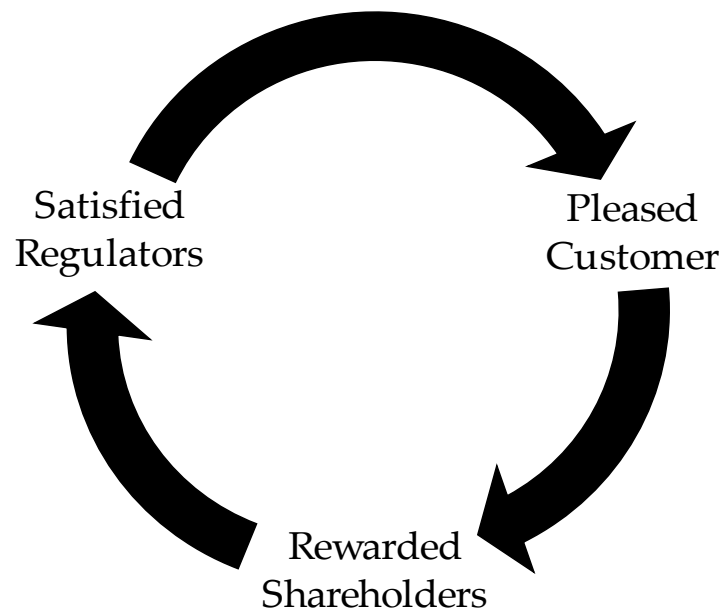
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An Abundance of Investment Opportunities Exist

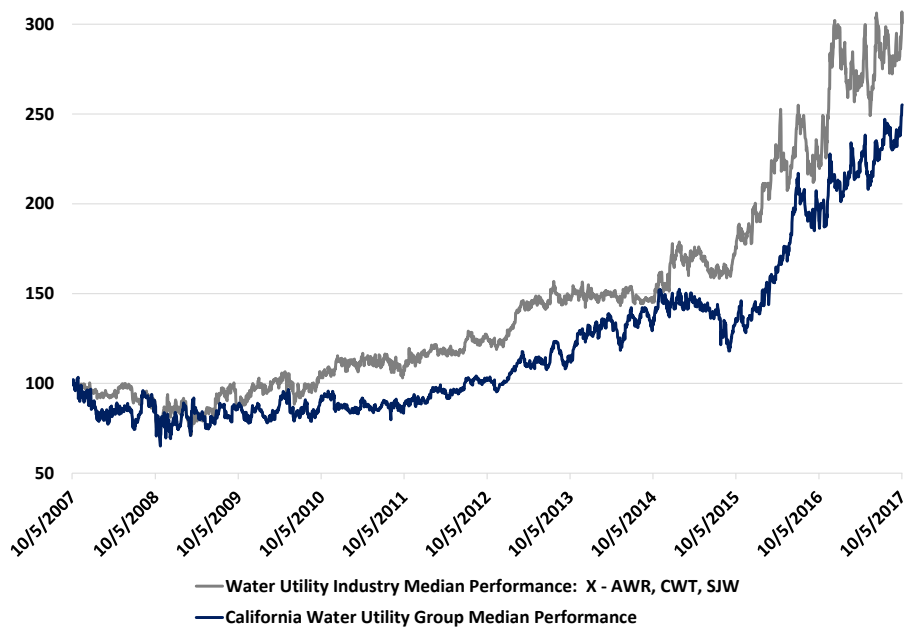
- According to the World Federation of Exchanges, Bloomberg and International Monetary Fund – the global equity market capitalization is over \$75.0 trillion
 - The global utility sector stands at nearly \$3.0 trillion
- Utility stocks appeal to certain investors – Yield, Yield + Growth
 - These same investors have choices – Master Limited Partnerships, Real Estate Investment Trusts, Telecom
- Approximately 100 domestic utility stocks presently exist
 - Even more debt instruments are in the marketplace
- Utility categories – Electric, Gas, Water
- The investment community neatly fits Public Utility Commissions (PUCs) into three categories – Favorable, Neutral, Unfavorable

A Balanced Approach



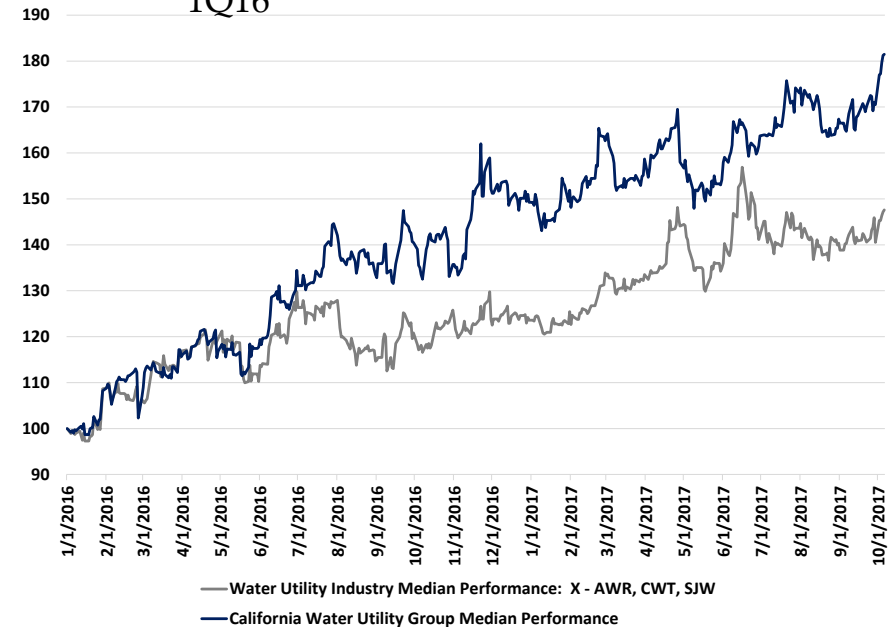
California Regulatory Setting Drives Outperformance in Hike Cycle

California Underperformed on 10-Year....



Source: FactSet, Atwater Thornton Equity Research

....BUT Outperformed Since
1Q16



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14 to 38 Month Outlook

- Most significant macro influence on water investing returns → Fed tightening cycle
- See potential for three scenarios playing out
 - #1: Data vindicates Fed dots and Officials hike
 - #2: Data does not vindicate Fed dots and Officials hike
 - #3: Data does not vindicate Fed dots and Officials pause/periodically hike
- Water industry return outlook economic data dependent from now through 2020
 - Extended DuPont ROE = Peak Earnings
 - Valuation

Currently meaningful points to track

- Wage Growth
- CPI
- Core PCE
- Medical Care Pricing
- Shelter Pricing
- Water & Sewer CPI
- 10-Year Bond Yield
- President Trump ~ Taxes & Infrastructure
- Three Water Composite Sustainable Downturn Triggers = Inflation Fighting Fed, Rapidly Rising Commodity Prices, Cyclical Overheating



ROE	=	Leverage	x	Operating Efficiency	x	EBIT Profit Margin	x	Interest Burden	x	Tax Burden
Formula		$\frac{\text{Assets}}{\text{Equity}}$		$\frac{\text{Sales}}{\text{Assets}}$		$\frac{\text{EBIT}}{\text{Sales}}$		$\frac{\text{Pretax Income}}{\text{EBIT}}$		$\frac{\text{Net Income}}{\text{Pretax Income}}$
Comment		High but peaking		Peaking		High but primed for fall		Low but rising		High but may fall
		Hard to add to already high level as rates rise		Sales growth up but productivity waning		Cost of labor, goods rise		Increase as borrowing rates climb		Tax cut legislation possible

Water Utility Industry Risks

- In addition to normal economic and market risk factors that impact most all equities, water utilities are uniquely at risk to:
- The outcome of regulatory filings: regulated operations are subject to state and federal regulations. Changes in the regulatory environment can impact a company's financial performance. In addition, water utilities continuously file requests with state Commissions for rate increases in order to achieve rates of return on water assets. If state Commissions deny these rate requests in whole or in part, it would likely have a negative impact on earnings.
- Product safety: Water is the only utility with a product that is ingested. Though regulated water utilities traditionally have strong track records with respect to water contaminants, a breakdown in safety procedures could have a markedly negative effect.
- Federal and state environmental laws and regulations impose substantial compliance requirements on water utility operations. A water utility's operating costs could be significantly increased in order to comply with new or stricter regulatory standards imposed by federal and state environmental agencies.
- Water utilities are impacted by weather conditions and are subject to seasonal fluctuations which could adversely affect demand for water service and revenues.
- Drought conditions and government imposed water use restrictions may impact a water utility's ability to serve current and future customers. This may adversely affect the water utility's financial condition and results of operations.

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