

COUNCIL OF INFRASTRUCTURE FINANCING AUTHORITIES

A NATIONAL NON-PROFIT ASSOCIATION REPRESENTING  
PUBLIC INFRASTRUCTURE FINANCING AGENCIES

# Update on the Municipal Water/SRF Industry

November 11, 2014

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# Update on the Municipal Water/SRF Industry

## Panelists

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Moderator	
<p><b>Tom Liu</b> Managing Director Bank of America Merrill Lynch 646-743-1361 thomas.liu@baml.com</p>	<ul style="list-style-type: none"><li>■ Manager, Water and Wastewater/SRF Group</li><li>■ 25 years of SRF experience</li><li>■ Served as senior manager on 176 SRF transactions totaling over \$17 billion of SRF financings for 24 SRF programs in the nation</li></ul>
Panelists	
<p><b>Florence Zeman</b> Associate Managing Director Moody's Investor Services 212-553-4836 florence.zeman@moodys.com</p>	<ul style="list-style-type: none"><li>■ Manager, Public Finance Housing Finance &amp; State Revolving Funds Team</li><li>■ Participates in ratings of other public finance credits, real estate and asset backed transactions and sovereigns and sub-sovereigns</li><li>■ Member of public finance and structured finance policy committees at Moody's</li></ul>
<p><b>Michael Vann</b> Executive Consultant Black and Veatch  vannMO@bv.com</p>	<ul style="list-style-type: none"><li>■ 35 years of water industry experience in utility management and consultant roles</li><li>■ Previously CFO and General Manager of the Birmingham AL Water Works Board</li><li>■ Various Board and Associate memberships including Association of Metropolitan Water Agencies, AWWA and Alabama Bar</li></ul>
<p><b>Roger Rosendahl</b> Partner Stoel Rives LLP 202-398-1760 rrosendahl@stoel.com</p>	<ul style="list-style-type: none"><li>■ 20 years of experience in corporate and finance transactions</li><li>■ Previously served as head of Global Project Finance and Privatization and Head of Energy at Major New York City Law Firms</li><li>■ Recognized among both Manhattan "Super Lawyers" and "Top Lawyers in California"</li></ul>



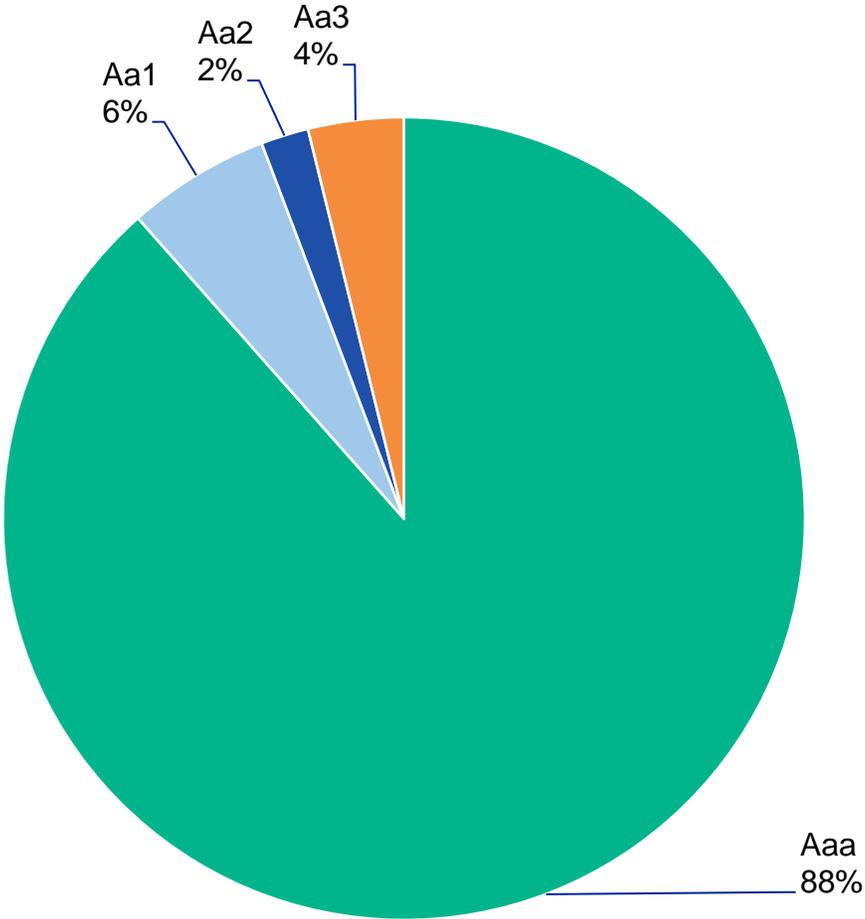
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# Municipal Market Developments

CIFA – National SRF Workshop

# State Revolving Fund Sector's Strong Credit Quality and Stellar Performance Reflected in High Ratings

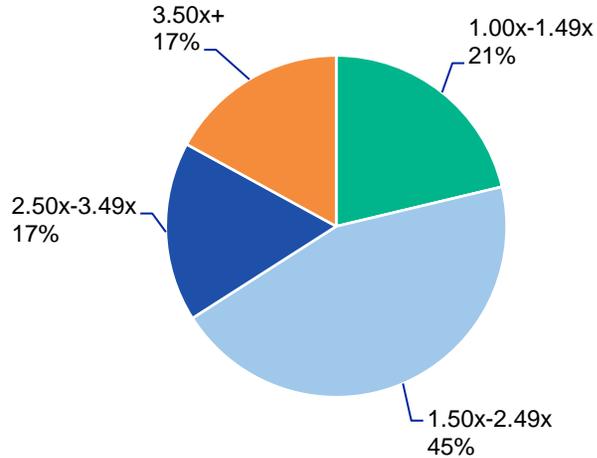
SRF Programs Exhibit High Credit Quality



Source: Moody's Investors Service

# Strong Overcollateralization of Loans and Reserves to Bonds Allows for High Default Tolerance Levels

Overcollateralization is Evidenced by High Asset-to-Debt Ratios



Source: *Financial Statements and Moody's Analysis*

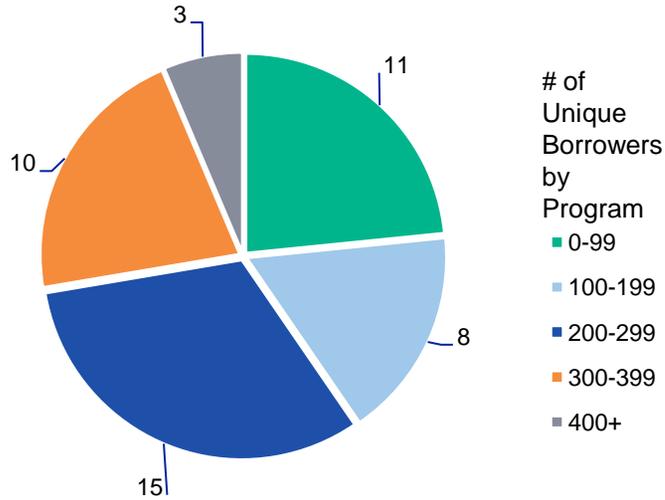
Nearly Half of All Programs Demonstrate Default Tolerance Levels Above 40%

Default Tolerance Ranges	Number of Programs
0-9.99%	0
10-19.99%	0
20-29.99%	11
30-39.99%	15
40-49.99%	10
50-59.99%	7
60-69.99%	2
70%+	2

Source: *Financial Statements and Moody's Analysis*

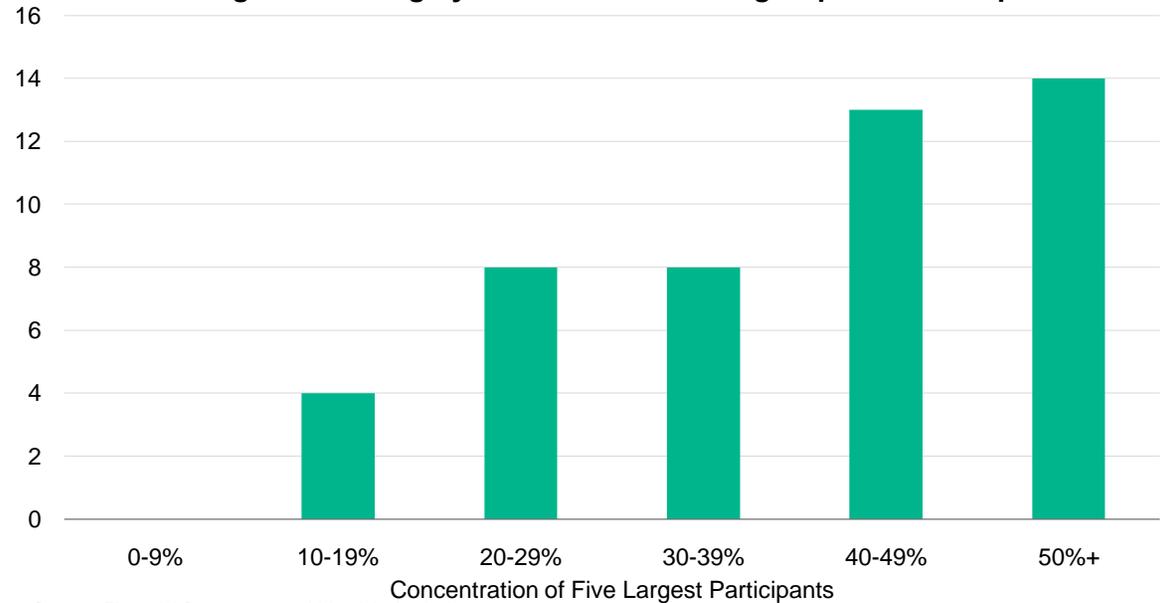
# Loan Pools are Large but Concentrated

Pools Highly Diversified by Number of Borrowers...



Source: Financial Statements and Moody's Analysis

...But Most Programs are Highly Concentrated Among Top Five Participants



Source: Financial Statements and Moody's Analysis

# Challenges and Opportunities for SRF Programs

- » Complex legal structure and cash flows
  - Flow of funds
  - De-allocation and movement of excess
- » Low investment and loan rates
- » Borrower credit quality
- » EPA funding and meeting EPA requirements
- » Meeting growing needs while maintaining strength of program

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# BUILDING A WORLD OF DIFFERENCE

## 2014 STRATEGIC DIRECTIONS: U.S. WATER INDUSTRY

MIKE VANN

2014 CIFA SRF NATIONAL WORKSHOP

November 12, 2014

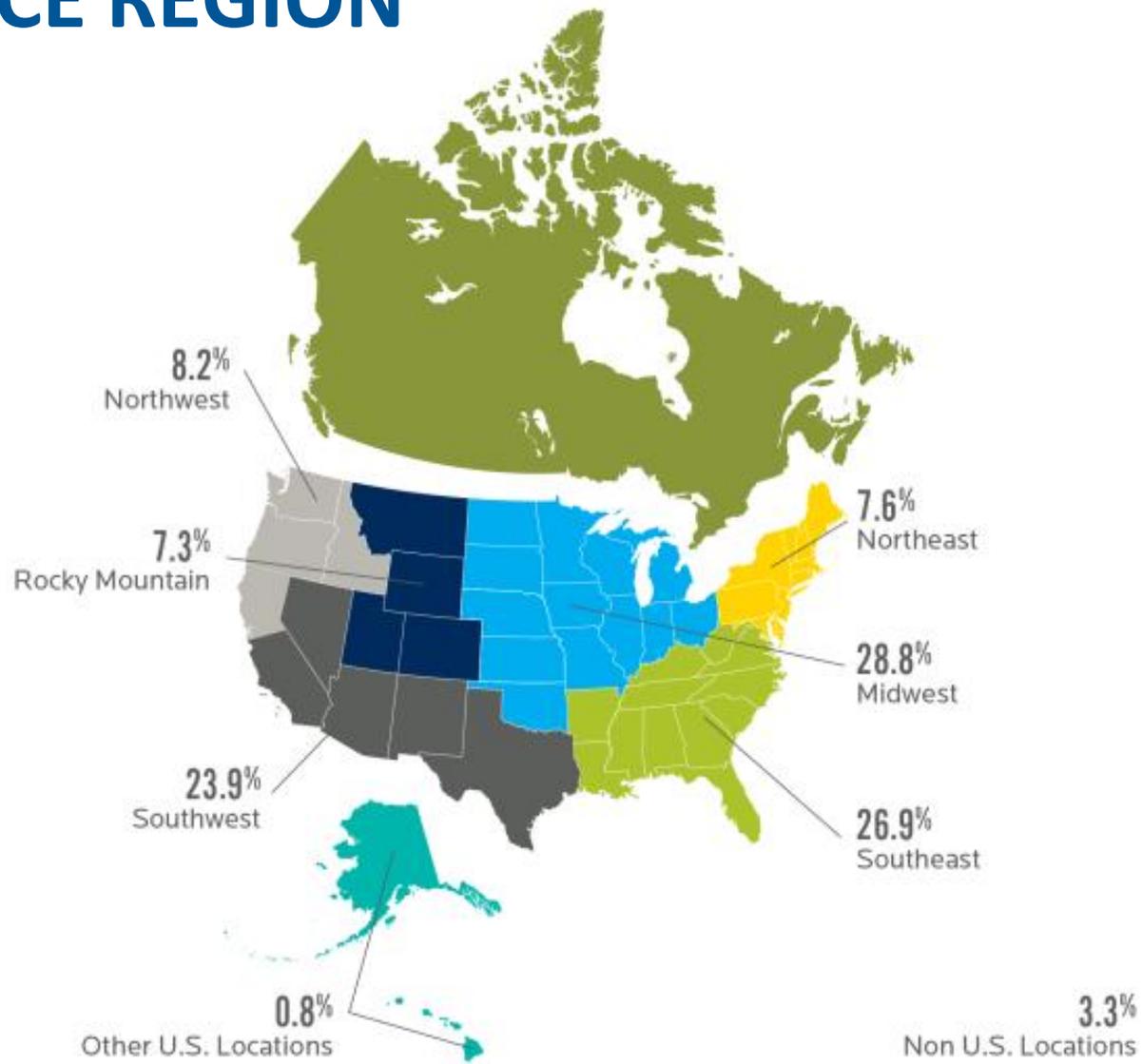


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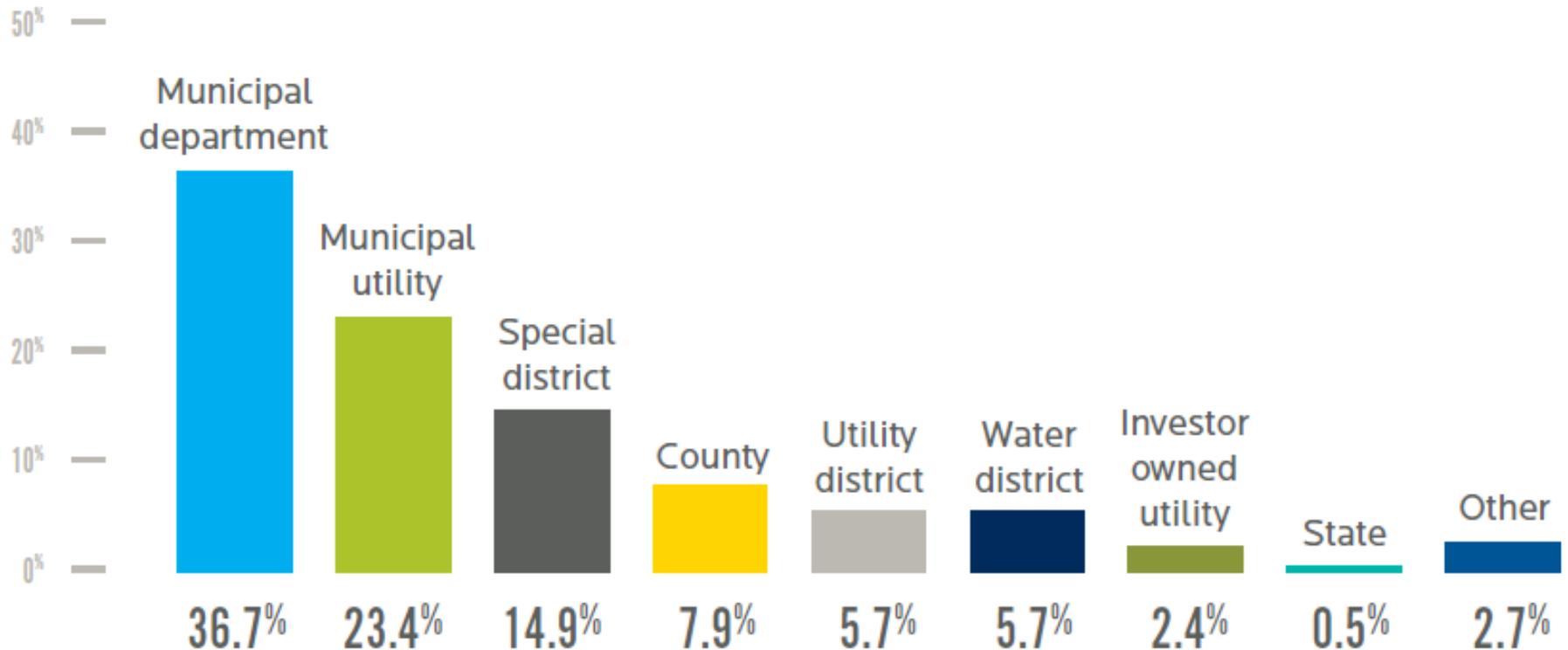
# STUDY OVERVIEW

- **2014 Strategic Directions Survey – U.S. Water Industry**
- **Online survey of qualified water utility industry professionals conducted March 3 – April 4, 2014.**
- **Third annual survey**
- **368 completed the survey**

# INDUSTRY RESPONDENTS BY SERVICE REGION

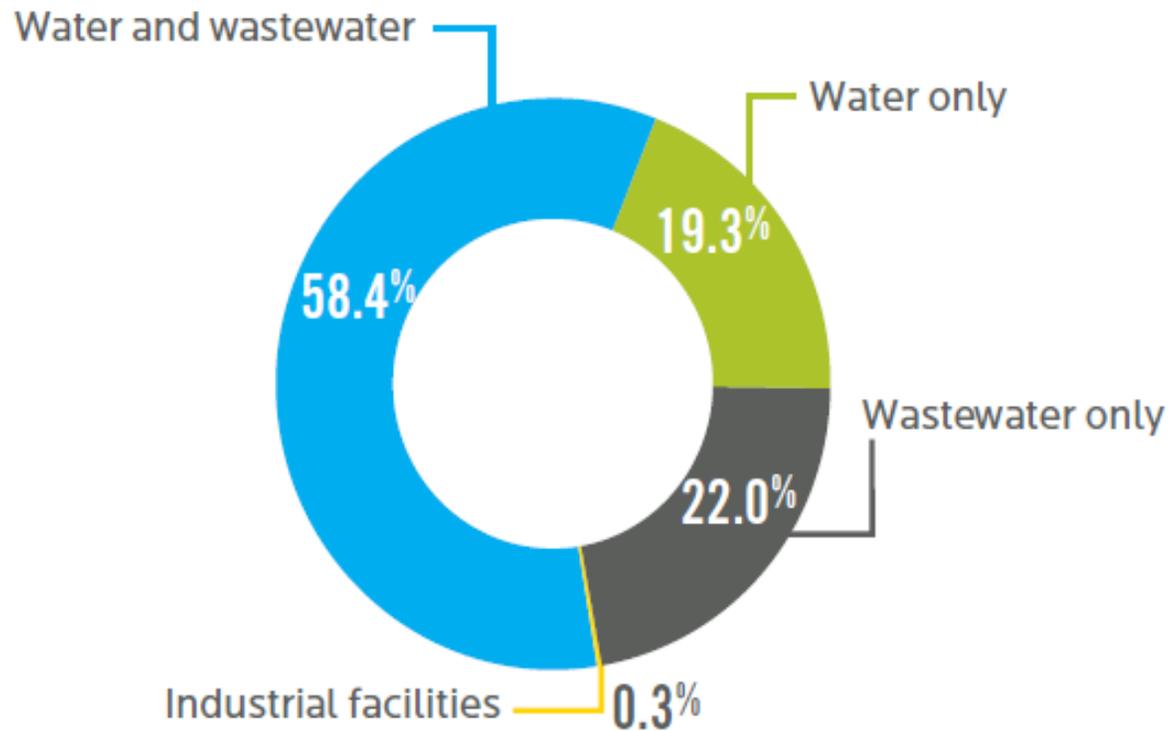


# INDUSTRY RESPONDENTS BY TYPE OF ORGANIZATION



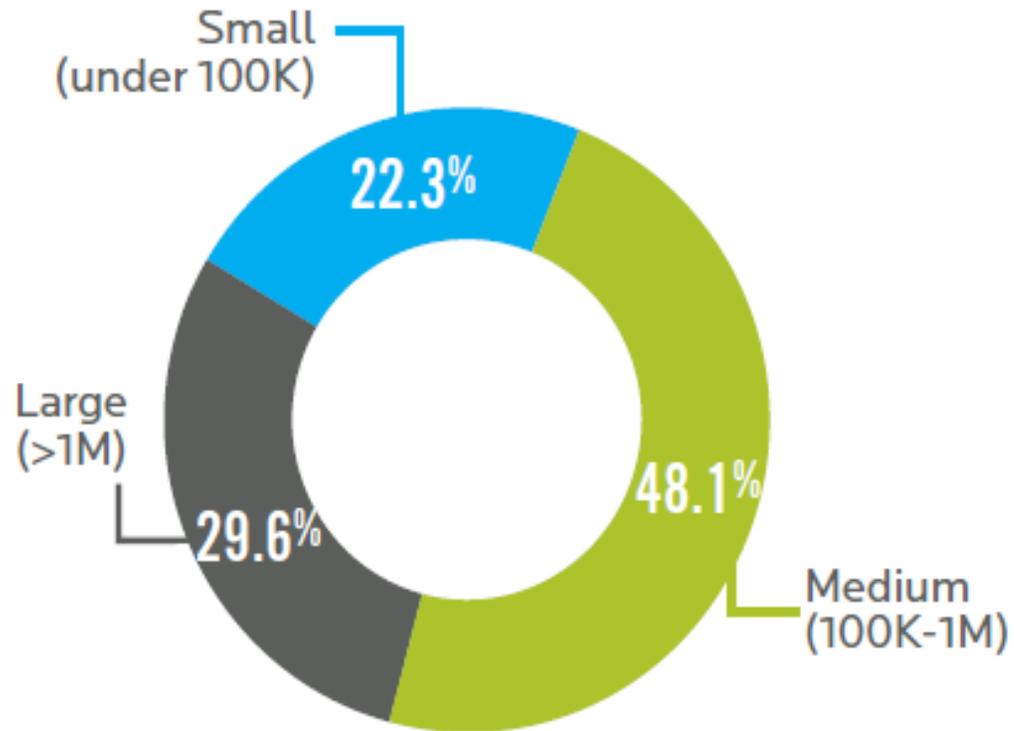
Source: Black & Veatch

# INDUSTRY RESPONDENTS BY TYPE OF SYSTEM



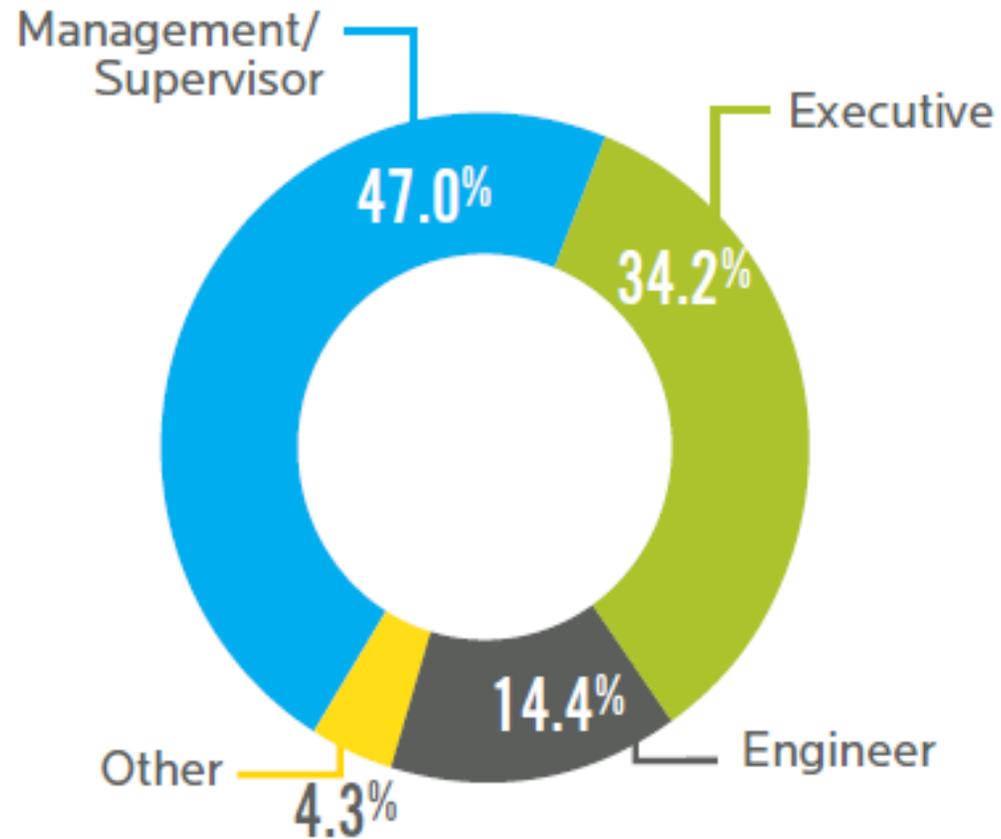
Source: Black & Veatch

# RESPONDENTS BY SIZE OF POPULATION SERVED



Source: Black & Veatch

## RESPONDENTS BY JOB FUNCTION



Source: Black & Veatch

# MAJOR ISSUES

- **Financing**
- **Sustainable Water Supply**
- **Operational Efficiencies**
- **Aging Infrastructure**
- **Disruptions and Climate Issues**
- **Approaches for capital programs**

# MAJOR ISSUES

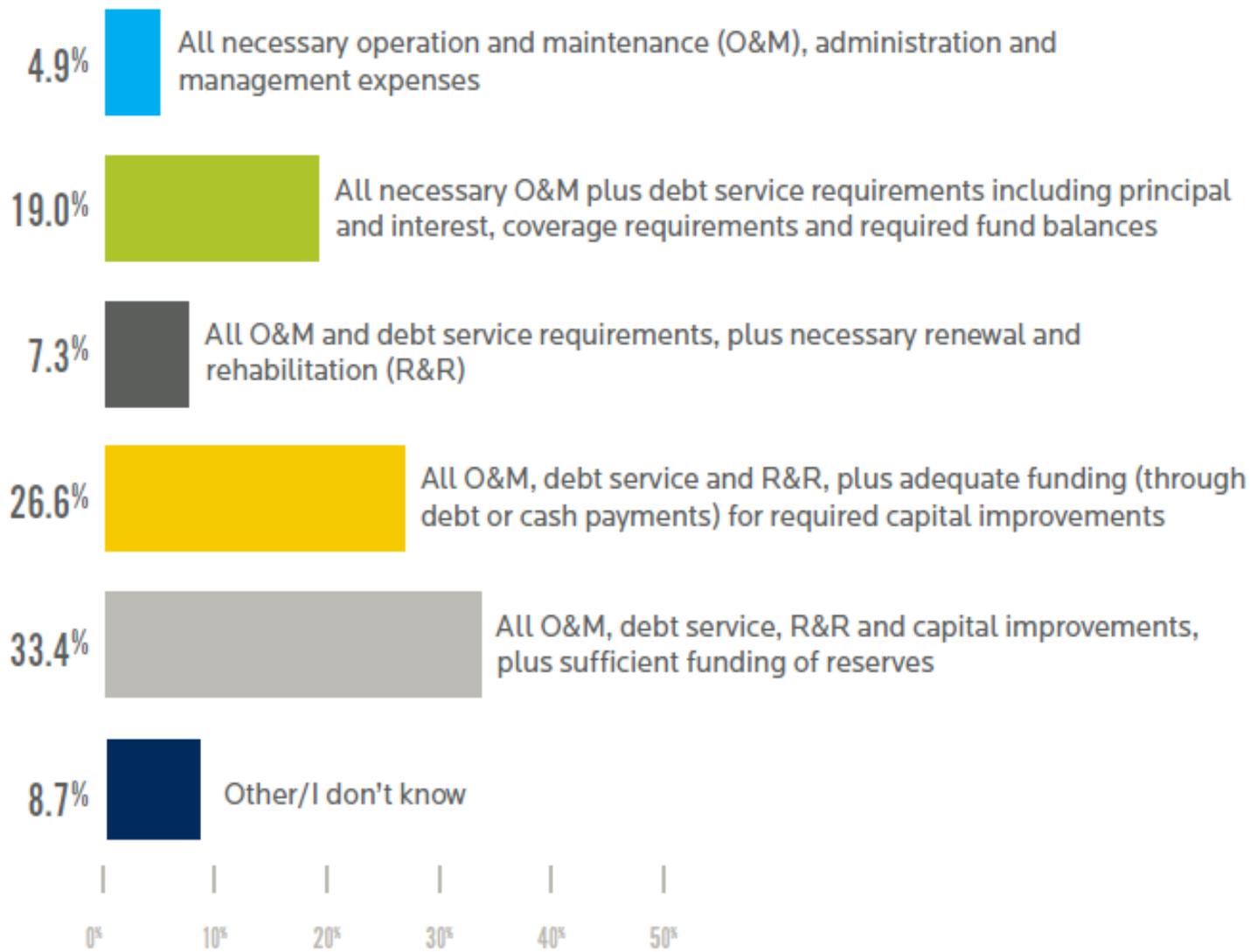
- **Financing**
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# FINANCING

- **Constraints & difficulties to water and sewer rate increases**
  - Deferred maintenance
  - Insufficient capital spending
  - Run to fail management practices
- **Only 1/3 of utilities in US have in place a revenue or rate structure to cover all necessary components for financially sound operation**

# FINANCING

## COVERAGE LEVELS FROM CURRENT UTILITY REVENUES

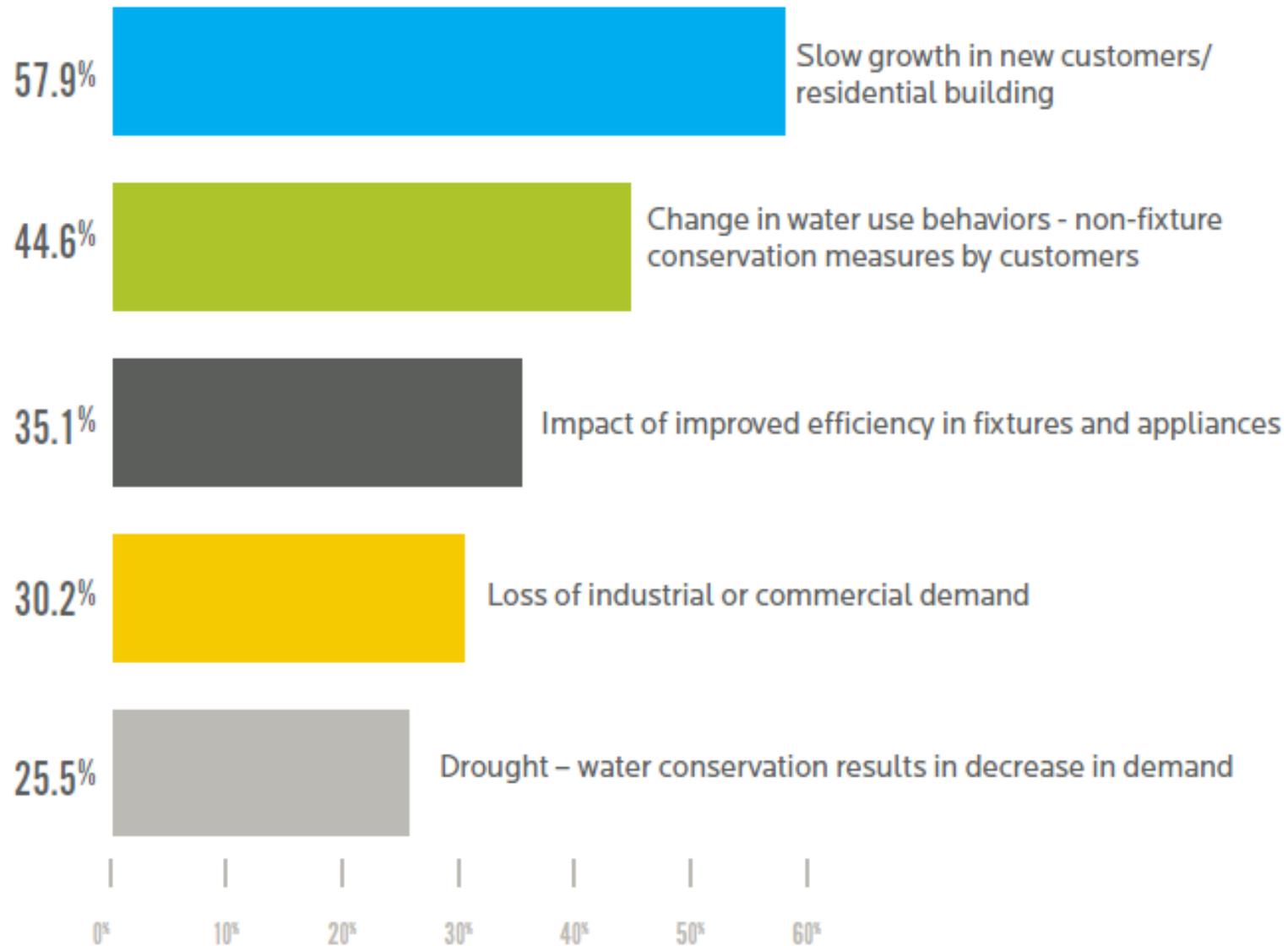


Source: Black & Veatch

Respondents were asked to select the option that best describes the coverage level achieved under their current revenue/rate structure.

# FINANCING

## TOP ITEMS THAT HAVE NEGATIVELY IMPACTED REVENUES DURING THE PAST FIVE YEARS



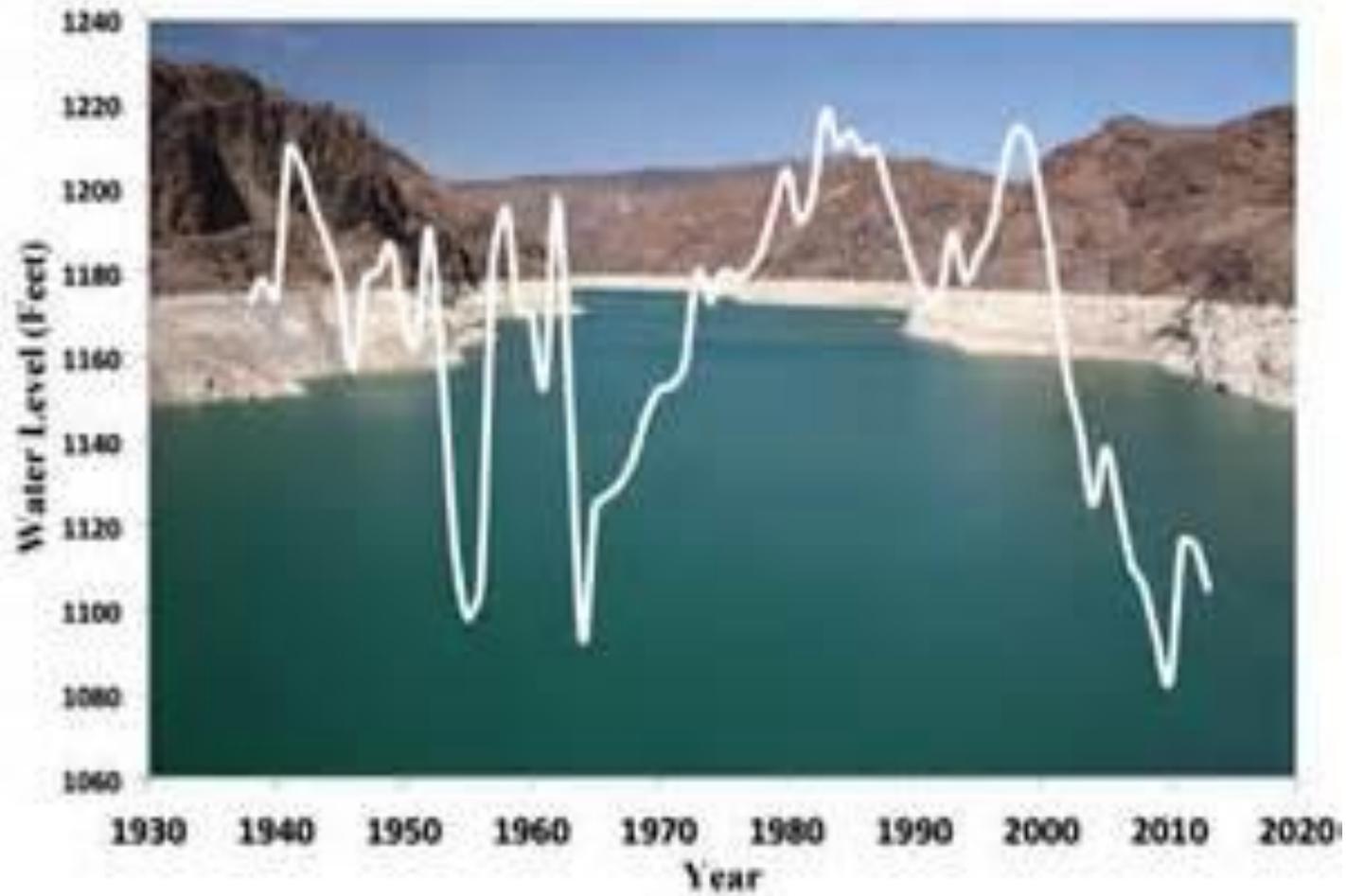
# MAJOR ISSUES

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# LAKE MEAD – PRIMARY WATER SOURCE FOR LAS VEGAS



### Lake Mead Water Level in July, 1938 - 2013

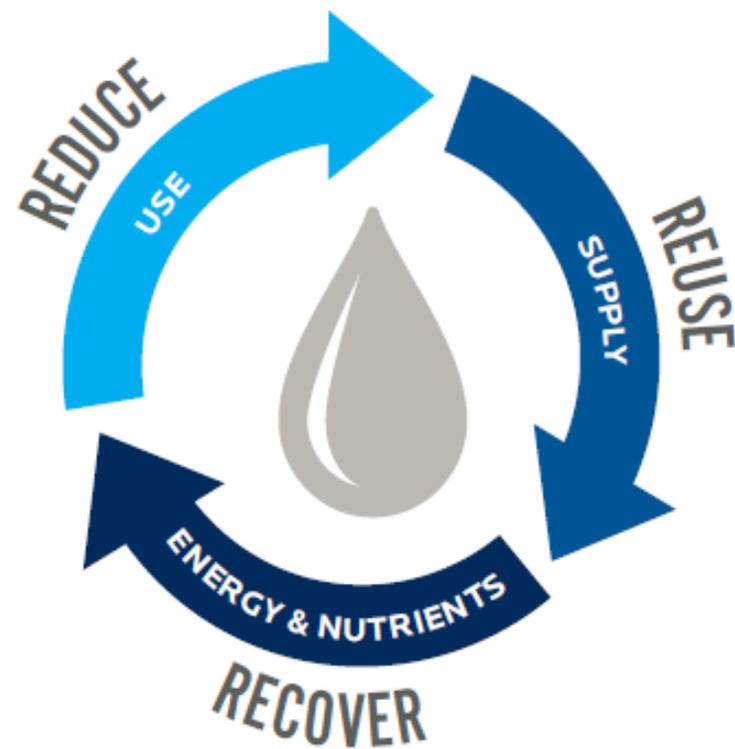


# LAKE MEAD



# SUSTAINABLE WATER SUPPLY

- **Issues:**
  - Sustained drought
  - Federal and state regulations
- **Solutions:**
  - Public awareness of environmental programs
  - Reduce, reuse, recover



# SUSTAINABLE WATER SUPPLY

- **Reduce**
  - Innovative rate structures
  - Leak detection
  - AMI programs
- **Reuse**
  - 1/3 of utilities have some form of water reuse
  - Capture of stormwater
  - Alternative water supplies
- **Recover**
  - Nutrient recovery from wastewater

# USE OF TECHNOLOGY IN OVERCOMING WATER SCARCITY

- California, Texas, south Florida – daily discussion on the value of water and water scarcity
- Water smart grid
- AMI/AMR systems

# MAJOR ISSUES

- Financing
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# WATER UTILITIES DOING EFFICIENCY REVIEWS

- **ALCOSAN**
- **City of Phoenix, AZ**
- **Greater Cincinnati Water Works (GCWW)**
- **Louisville Water / Louisville MSD**
- **City of Tulsa, OK**
- **Miami-Dade County Water and Sewer Department**
- **City of San Diego, CA**
- **Las Vegas, NV**

# OPERATIONAL EFFICIENCIES

- Energy cost – one of largest operational expense for water utilities (other is labor)
- Sustainable operations -> asset management framework
- Goal: reduce energy consumption, improve maintenance programs and potentially improve cash flow and billing accuracy
- The water smart grid – AMR and AMI programs

# TECHNOLOGIES TO BETTER MANAGE ENERGY USE

- Replace aging equipment – 79.1%
- Use SCADA data analytics to enhance efficiencies – 71.2%
- Energy efficiency, optimization, management – 65.8%
- Energy audit – 59.8%
- Solar power – 32.3%
- Energy recover from biosolids – 32.3%
- Develop energy master plan – 31%
- Cogeneration/CHP – 26/6%
- Hydropower – 19.8%
- High-strength waste acceptance/codigestion – 17.7%

# MAJOR ISSUES

- Financing
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# 2013 REPORT CARD - ASCE

- **Drinking Water – grade D**
  - \$1 trillion investment to be spent over 25 years to replace pipes
  - 4000-5000 miles of pipe replaced annually (will peak by 2035 with 16,000-20,000 miles)
- **Wastewater – grade D**
  - \$298 billion investment for 20 year aging infrastructure needs (Clean Watersheds Needs Survey 2008)



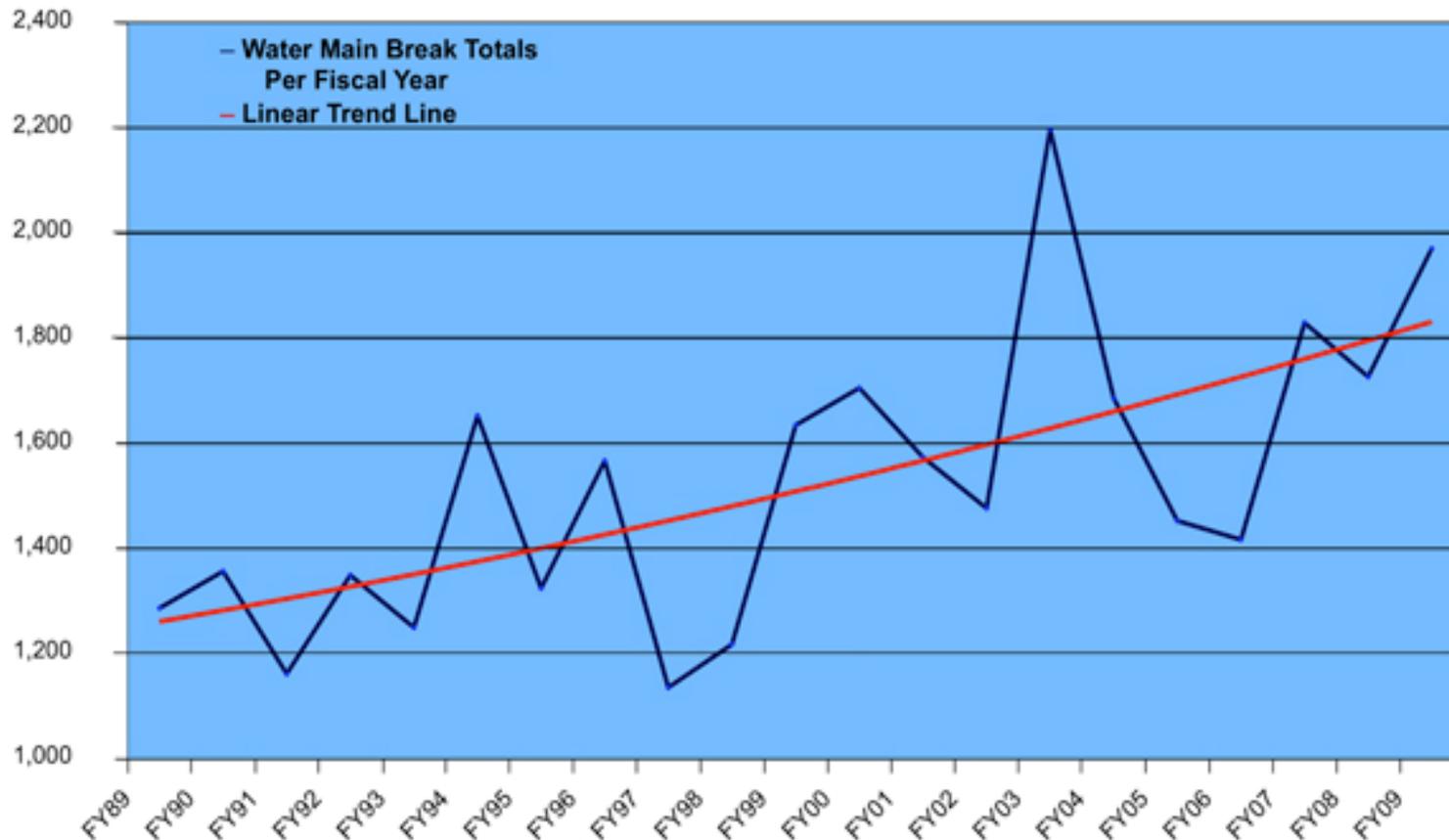
# UCLA CAMPUS WATER MAIN BREAK

## JUNE 30, 2014



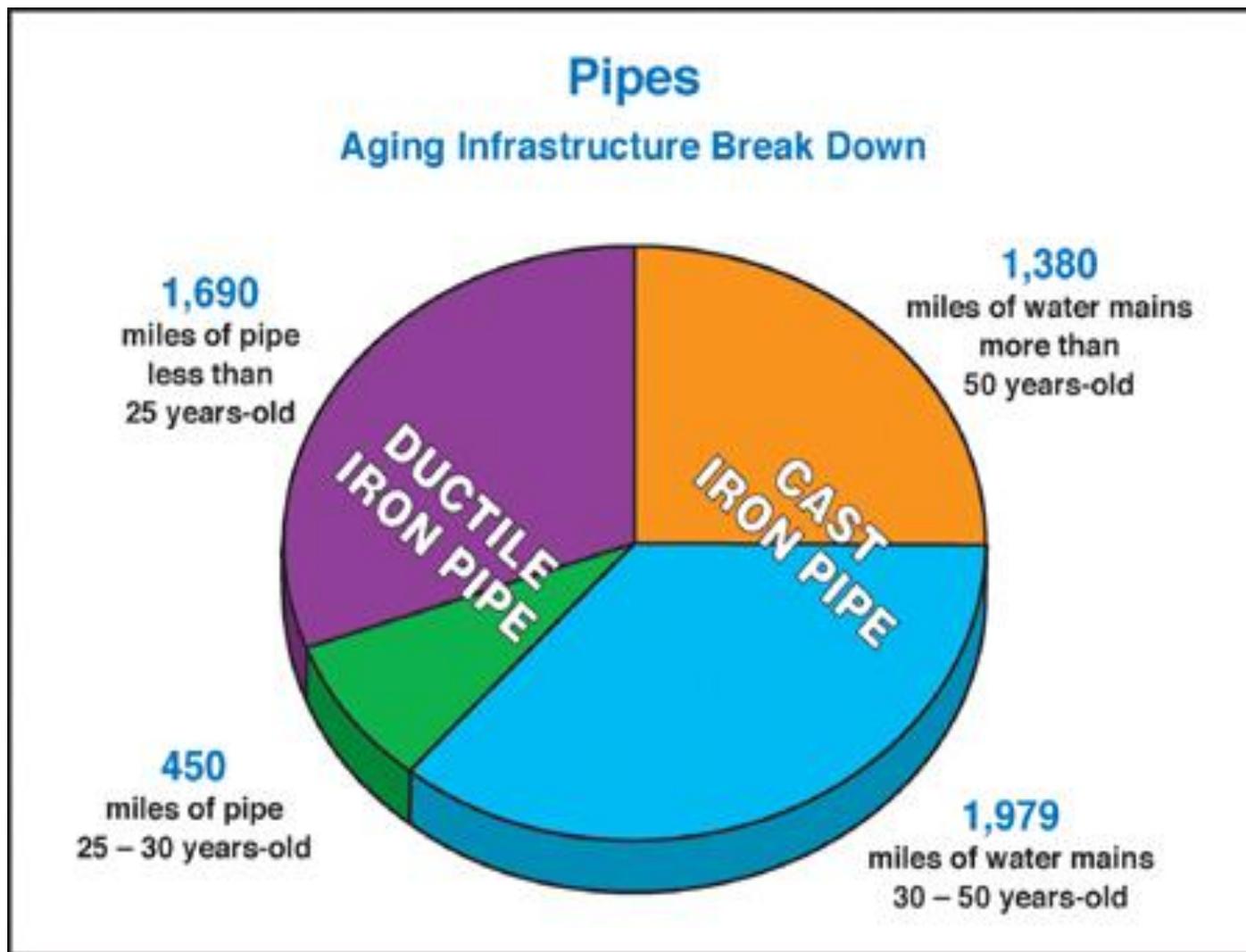
# WASHINGTON SUBURBAN SANITARY COMMISSION - MAIN BREAKS

## Water Main Breaks by Fiscal Year



**Source: Washington Suburban Sanitary Commission, June 2010**

# WASHINGTON SUBURBAN SANITARY COMMISSION



Source: Washington Suburban Sanitary Commission, June 2010

# AGING INFRASTRUCTURE

- Industry is reaching tipping point for critical infrastructure rehabilitation, replacement and expansion
- Replacing aging equipment leads to better management of energy use



# AGING INFRASTRUCTURE

- **Development of rehabilitation projects for CIP**
  - Staff knowledge of the asset base and understanding of condition – 85.6%
  - Detailed condition assessment – 62.8%
  - Risk assessment – 61.4%
  - Book life/design life – 27.2%
  - Deterioration modeling – 15.5%
  - Other – 4.1%

# MAJOR ISSUES

- Financing
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- **Disruptions and Climate Issues**
- Approaches for capital programs

# TORNADO DAMAGE BIRMINGHAM WATER WORKS APRIL 2000



# SUPER DOME AFTER HURRICANE KATRINA – AUGUST 2005



■



# HURRICANE SANDY 2012



# NEW YORK CITY – 2012 AFTER HURRICANE SANDY



# MIAMI SEA LEVELS 2070

16 March 2011



Source: Business Insider



# DISRUPTION AND CLIMATE ISSUES

- **Climate change can impact the long term water supply planning process**
- **38% of the survey respondents identified the potential climate change as a source of concern, with 61.5% of those being in the northwest.**

# LONG RANGE WATER SUPPLY PLANNING

- Drought contingency planning for water conservation, community outreach and use of alternative supplies – 64.8%
- Water recycling/reuse – 50.2%
- Sustainability assessment for facilities planning – 41.1%
- Integrated water management or total water management – 40.4%
- Potential impacts of climate change – 38%
- Scenario planning – 36.2%
- Desalination of brackish or ocean supplies – 15%
- Other – 4.2%
- I don't know – 10.5%

# DISRUPTION AND CLIMATE ISSUES

- **Most predominant in the southeast due to hurricanes, water scarcity, population growth, federal and/or state regulations regarding water effluent quality**
- **Stricter regulations can lead to potentially more sources**
- **Advanced water treatment programs to meet nutrient removal regulations can help with water scarcity issues**

# MAJOR ISSUES

- Financing
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- Operational Efficiencies
- Aging Infrastructure
- Disruptions and Climate Issues
- **Approaches for capital programs**

# FORMER CONTRACTOR



# APPROACHES FOR CAPITAL PROGRAMS

- **Asset management programs – focus on replacing the right asset at the right time**
- **Planning – required for future success**
- **New ISO 55001 standard for asset management**

# CURRENT USAGE PLAN FOR TOOLS/SYSTEMS THAT SUPPORT ASSET MANAGEMENT

- GIS systems – 53.3%
- CIP prioritization – 50.5%
- Hydraulic models – 46.5%
- Computer maintenance management systems – 36.4%
- Condition assessment and inspections – 34.2%
- Paperless work order management system – 25.8%
- Enterprise management software – 17.7%
- Dashboards – 17.7%
- Mobile applications – 16.3%
- Deterioration models – 5.4%

# 2014 STRATEGIC DIRECTIONS: U.S. WATER INDUSTRY SURVEY

- <http://bv.com/reports/water>

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# Panel on Municipal Market Developments

## CIFA SRF Workshop

*Presented by:*

**Roger Rosendahl**

Stoel Rives, LLC  
San Francisco and Washington, D.C.



November 11, 2014 ● Portland, Oregon



# Significant Market Developments

- High-Profile Municipal Bankruptcies
- Renewed Threats to Tax Exempt Status of Municipal Bond Issues
- Municipal Bond Market Movements



# Municipal Bankruptcy Basics

- Chapter 9 is different; no trustee; no estate
- State law distinctions (lien/no lien states)
- State/federal issues; federal law trumps
- General and revenue obligations
- Limitations of bankruptcy stay
- Politics; uncertainty
- Lawyers



# Market Impact Bankruptcies

- Historically rare
- Jefferson County, Alabama - \$4 billion
- San Bernadino – highlights city employees
- Stockton – spending-binge “train wreck”
- Puerto Rico – PREPA restructure
  - Lack of Congressional bankruptcy authority
  - Forbearance path to restructure



# DETROIT

- Biggest city; biggest bill - \$18-20 billion
- Unique circumstances – declining population (2 million to 700,000)
- Challenge to meaning of “general obligations”
- Legal opinions on legality of issue
- November 7 ruling



# Lessons

- Mainly local impact and soon dissipated
- General obligations - the “gold standard”?
- Secured revenue freed from stay
- DWSP water and sewer settlement – rate increases matched declining population
- Variable infrastructure finance risk (e.g., general vs secured, water vs transport)



# Threats to Municipal Issue Tax Exemption

- Historical protection in Constitution and early legal opinions
- *South Carolina vs Baker* (1988) found federal power to tax states/municipalities
- Exemption now reduced to public policy argument (although some question court decision would hold)



# Threats to Municipal Issue Tax Exemption

- Obama/Camp proposals – caps and subsidies; drive for revenue increase and deficit reduction; tax code simplification
- Implications – infrastructure development; reduced SRF funding; federal/state balance of power
- Prospects for passage unlikely; elections?



# Municipal Market Movements

- Increased yield spread between general and revenue obligations
- Municipal bond price increases
- Reduction in basis point spread between taxable and non-taxable
- Correlation with increased bankruptcy risk, Federal Reserve policy; supply and demand?

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