NARUC

Winter Committee Meetings

Committee On Water

Water Industry Fragmentation: Infrastructure, Investment, and Service Issues

Options for Regulators / Policymakers

Charles M. Davidson, Director
The Advanced Communications Law & Policy Institute
New York Law School

February 14, 2017

ACLP
ADVANCED COMMUNICATIONS LAW & POLICY INSTITUTE
at New York Law School

NEW YORK LAW SCHOOL

FRAMING DATA AND OBSERVATIONS

*#1 - The water sector is **extremely fragmented** and largely owned by local governments.*

- In excess of 52,000 Community Water Systems in the United States.
- Some 83 percent of those systems serve less than 3,300 consumers.
- Less than 1 percent serve over 100,000 consumers.
- A vast portion of these water systems are owned and operated by government entities.

ACLP
ADVANCED COMMUNICATIONS LAW & POLICY INSTITUTE
at New York Law School

NEW YORK LAW SCHOOL

FRAMING DATA AND OBSERVATIONS

#2 - The water sector is extremely capital-intensive.

- The water utilities space requires **more capital per revenue** than any other utility sector…

- Smaller utilities **often lack the financial resources** necessary to adequately invest in infrastructure and operations.

- Large-scale infrastructure upgrades are difficult for small utilities. The lack of financial resources can put pressure on small systems to **defer infrastructure investment** and needed maintenance.

ACLP
ADVANCED COMMUNICATIONS LAW & POLICY INSTITUTE
at New York Law School

NEW YORK LAW SCHOOL

FRAMING DATA AND OBSERVATIONS

#3 - Smaller water systems face a number of financial hurdles.

- Smaller firms are **often cash flow challenged** & need access to capital markets.
- Smaller companies often fail to seek or **fail in attracting the capital** required to invest in infrastructure and operations.
- **Rates are sometimes low** as a result of political pressure by local government to keep water bills (artificially) depressed.
- **Regulatory complexity** can also put downward pressure on water rates. Often, the ratemaking process can be so arduous for these small water systems that they forego the process all together.

ACLP
ADVANCED COMMUNICATIONS LAW & POLICY INSTITUTE
at New York Law School

NEW YORK LAW SCHOOL

FRAMING DATA AND OBSERVATIONS

#4 - Stringent environmental and water quality regulations add to the pressure cooker.

- Compliance with environmental and water quality regulations is costly… but important!
- Small municipal water systems have compliance issues and often fail to meet water quality standards.
- **More than two-thirds (approximately 74,000) of reported water quality violations are claimed by the smallest water systems**.
- A large portion of such systems are owned by local governments.

ACLP
ADVANCED COMMUNICATIONS LAW & POLICY INSTITUTE
at New York Law School

NEW YORK LAW SCHOOL

POTENTIAL SOLUTIONS

Commissions and decision-makers can pursue a number of approaches to address fragmentation issues and concerns.

- *Acquisitions* – System acquisition by large utilities can allow for **renewed infrastructure investment and added expertise**.

- *Consolidation* – The consolidation or regionalization of geographically contiguous small water systems **create economies of scale that benefit customers and utilities**.
  - Ex. California's mandatory consolidation law requires small failing systems to consolidate.

- *Public-Private Partnerships* – P3s allow municipal water systems to **tap into the technical and managerial expertise** of the private space while **maintaining ownership**.

- *Regulatory Streamlining* – Small systems that lack regulatory expertise benefit from making the **ratemaking process easier and more streamlined**.

DATA-DRIVEN SOLUTIONS

Effective policies must leverage data metrics to ensure that policies are effective.

- **Data-driven policies** will ensure that the right policies are implemented for a given system.
- There is **no "one size fits all solution"** for the water space.
- **Variables such as size, geographic location, water source, infrastructure age** and other considerations can drive outcomes.
- To develop best practices, it is **critical that these items be quantified and measured** in a way that allows for interoperability.

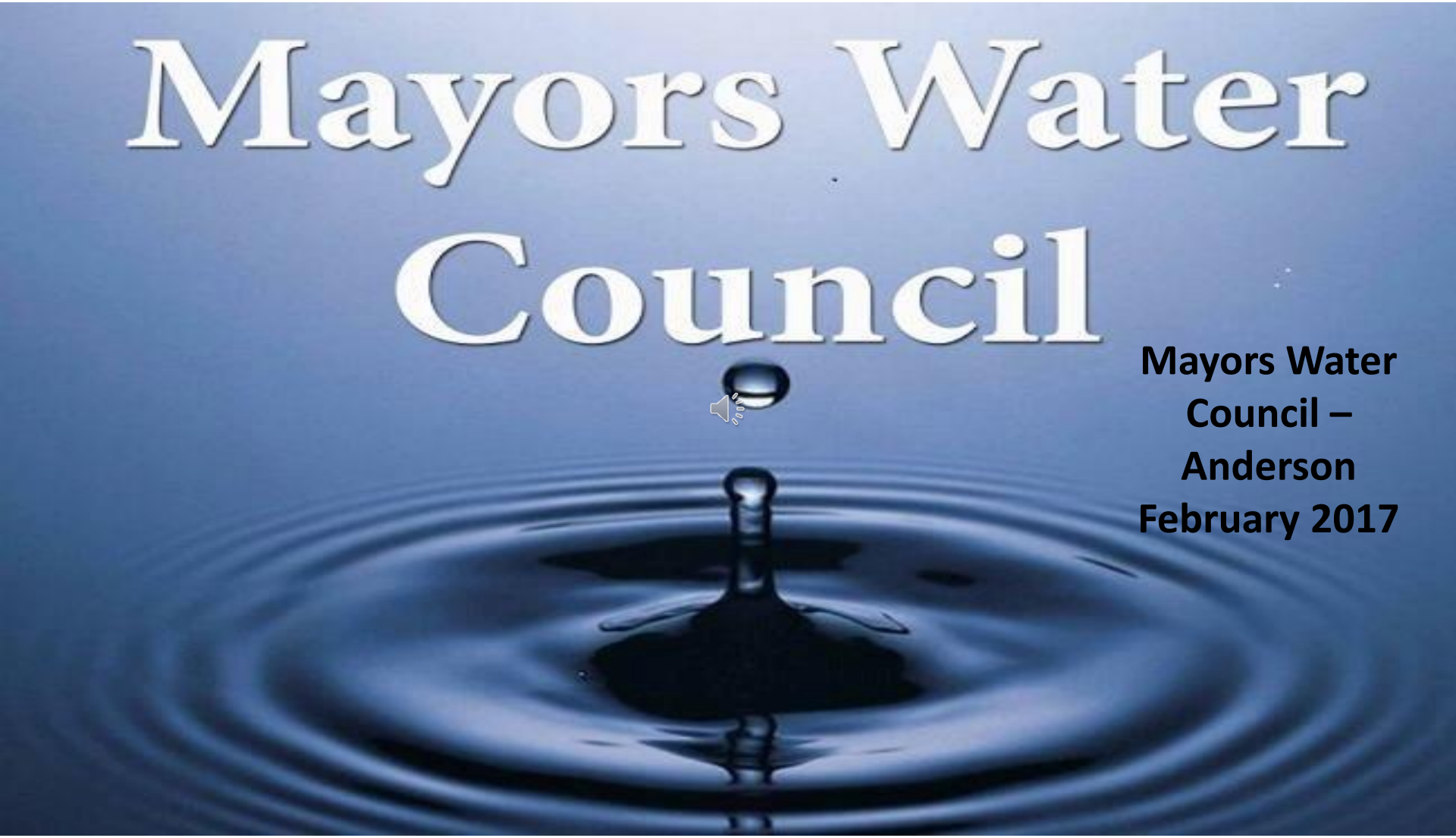
ACLP
ADVANCED COMMUNICATIONS LAW & POLICY INSTITUTE
at New York Law School

NEW YORK LAW SCHOOL

NARUC

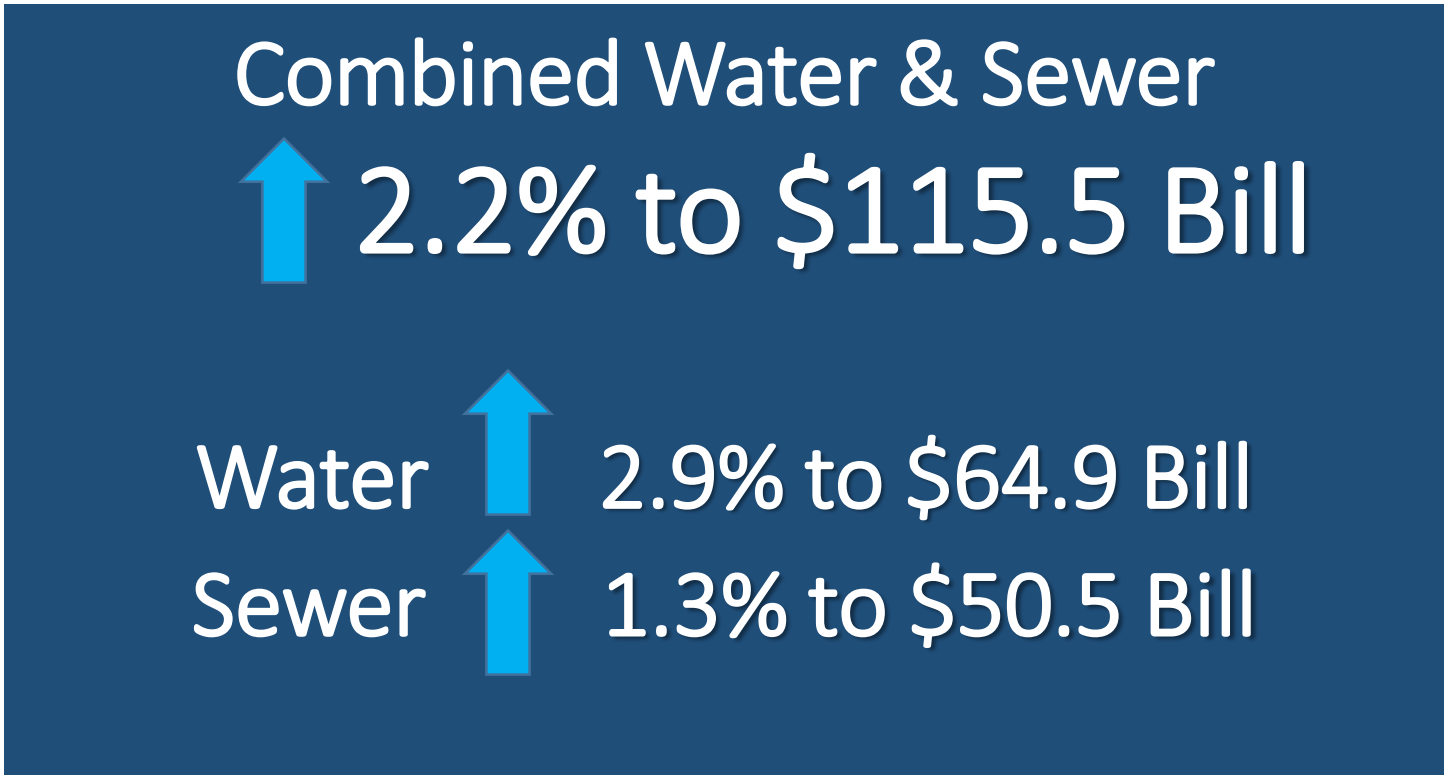
Winter Committee Meetings

Committee On Water



Mayors Water Council – Anderson February 2017

Total Spending Up from 2013 to 2014

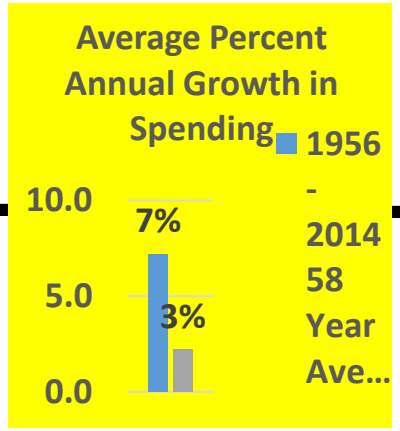


Mayors Water Council - Anderson

Percentage Growth in Public Water Investment

58 Year Long-Term Annual Growth Rate

7.0%



Average Growth Rate - YOY in the Last…

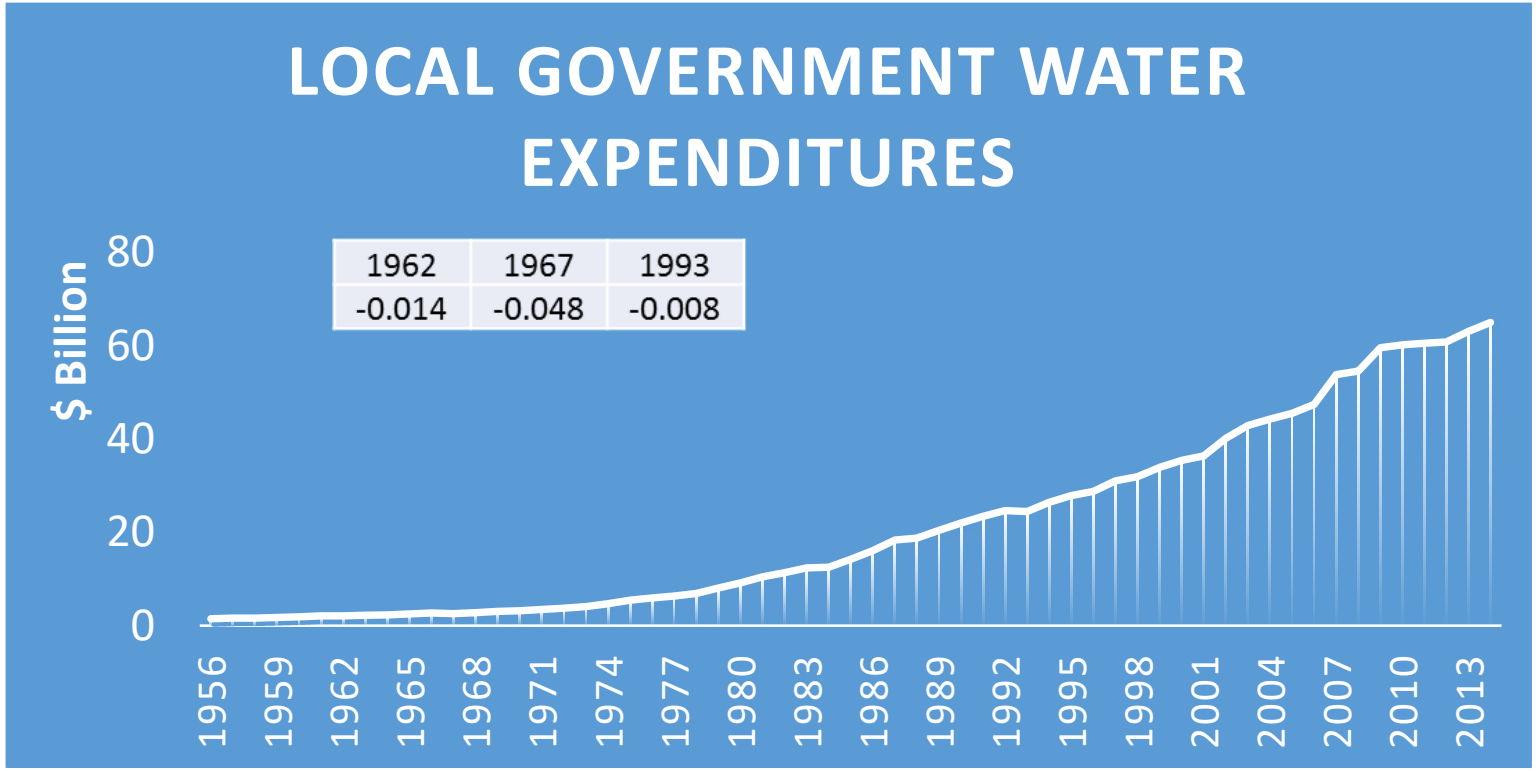
30 Years
1985-2014
6%

20 Years
1995-2014
5%

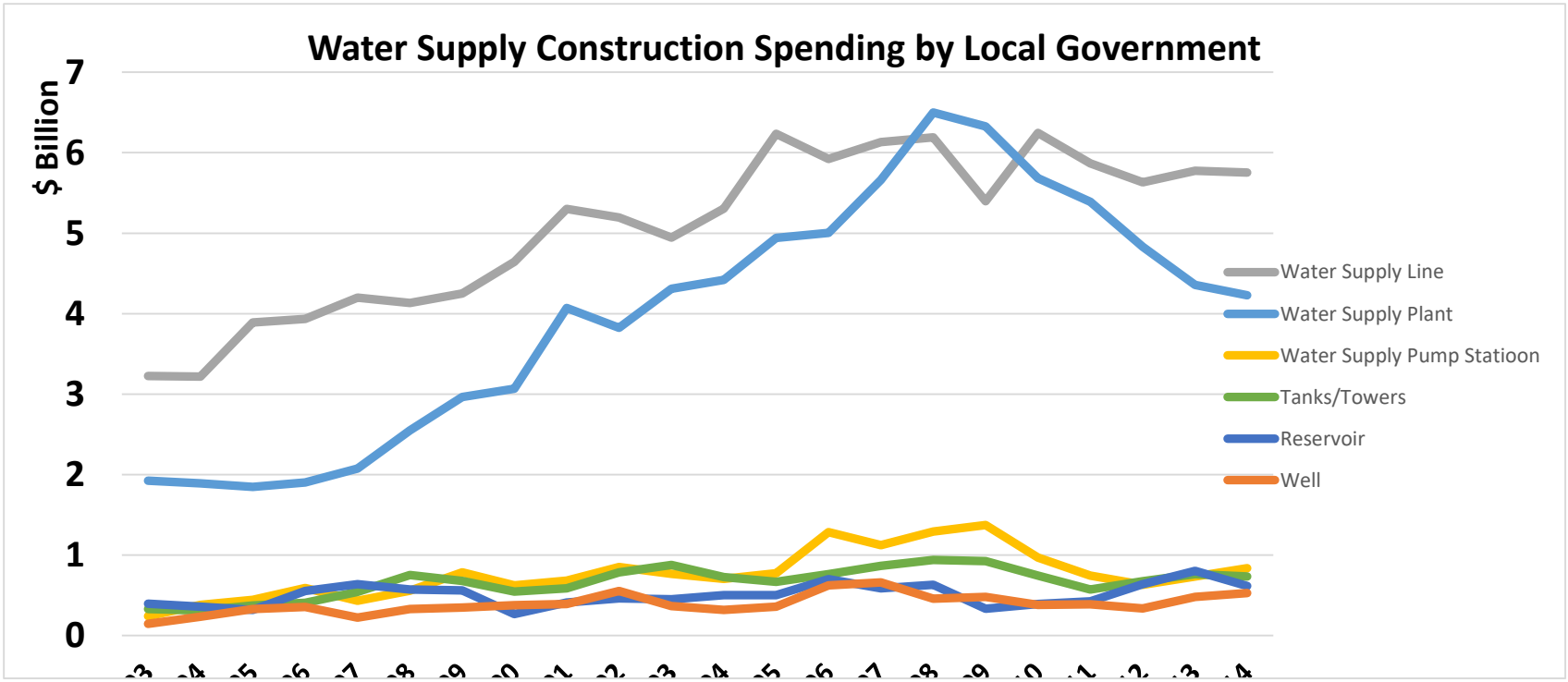
10 Years
2005-2014
4%

Mayors Water Council - Anderson

Mayors Water Council - Anderson



Mayors Water Council - Anderson



2014

Expenditures on Public Water

on Average For Every:

Hour: $7.4 mill/hour

Day: $178 mill/day

Month: $5.4 bill/month

Local Government Expenditures on Public Water and Sewer
(Vast inventory of plants and pipes)

1956 - 2014

$2.3 Trillion

$1.3 Trillion Water

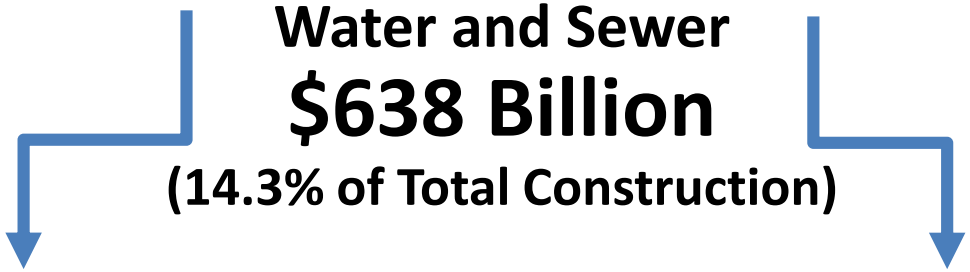
$1.0 Trillion Sewer

Mayors Water Council - Anderson

Mayors Water Council - Anderson

State and Local Construction, 1993-2014

$4.4 Trillion



$250.7 Billion

$387.3 Billion

2014 Construction

$12.6 bill

$12.7 bill

Mayors Water Council - Anderson

		1993-2014	
22/Yrs		SPEND	1993
RANK	COMPONENT	($Mill)	RANK
1	Sewer Line/pump station	163,308	2
2	WWTP	119,657	1
3	Water Line	111,394	3
4	Water Treatment Plant	87,769	5
5	Sewer Treatment Plant	65,394	4
6	WW Line	32,814	6
7	Water Pump Station	16,833	9
8	Water Tank/Tower	14,579	8
9	Reservoir	11,131	7
10	Well	8,685	10

Mayors Water Council - Anderson

1993-2014 Percent Change

Spending Volume	LOW	HIGH
HIGH	Water Treatment Plant: 119%/$88 bill Water Line: 78%/$111 bill Wastewater Treatment Plant: 114%/$119 bill	Sewer Line: 201%/$163 bill
LOW	Reservoir: 54%/$11 bill Tank/Tower: 122%/$14 bill Sewer Plant: -1%/$65 bill Wastewater Line: 109%/$33 bill	Well: 260%/$8.7 bill Water Pump Station: 247%/$17 bill

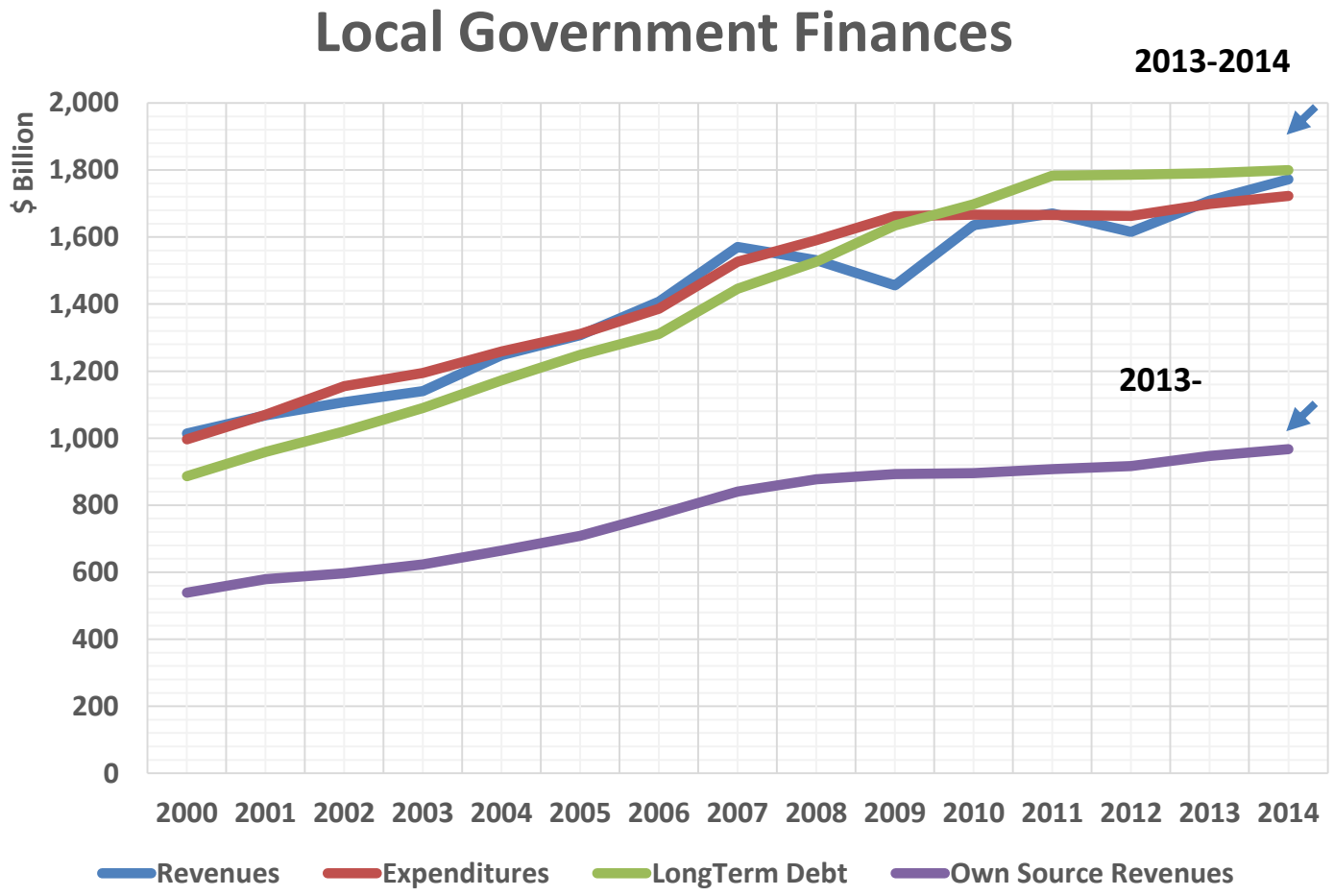
Mayors Water Council - Anderson

1993-2014 Percent Change

Spending Volume	LOW	HIGH
HIGH	Water Treatment Plant: 119%/$88 bill Water Line: 78%/$111 bill Wastewater Treatment Plant: 114%/$119 bill	Sewer Line: 201%/$163 bill
LOW	Reservoir: 54%/$11 bill Tank/Tower: 122%/$14 bill Sewer Plant: -1%/$65 bill Wastewater Line: 109%/$33 bill	Well: 260%/$8.7 bill Water Pump Station: 247%/$17 bill

Mayors Water Council - Anderson
Pipes and Pumps

	1993	2014	1993-2014
	($ Mill)	($Mill)	($Mill)
• Sewer Line/Pump Station (26%)	3,294	9,919	163,308
• Water Supply Line (17%)	3,225	5,754	111,394
• Wastewater Line/Drain (5%)	966	2,026	32,814
• Water Supply Pump Station (2%)	241	837	16,833
• Total Pipes and Pumps (50%)			324,349
• All-In Total Construction			$638 Billion


Local Government Finances
2013-2014
2013-
$ Billion
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014
Revenues
Expenditures
LongTerm Debt
Own Source Revenues

usmayors.org

Mayors Water Council

A Task Force of the United States Conference of Mayors

The Mayors Water Council provides a forum for Mayors to discuss issues impacting how their cities provide safe, adequate and affordable water and wastewater services and infrastructure in America's Principal Cities in the 21st Century. It is open to all Mayors, and focuses on water resources development, including: surface and sub-surface infrastructure financing and operations; water supply planning; watershed management; Public-Private Partnerships; water conservation; and, asset management and modernization of systems. The Mayors Water Council facilitates dissemination of information on best practices and public water policy.

NARUC

Winter Committee Meetings

Committee On Water

Case Studies in Industry Fragmentation
NARUC Winter Committee Meetings

February 14, 2017

David Stanton

President, Utility Operations

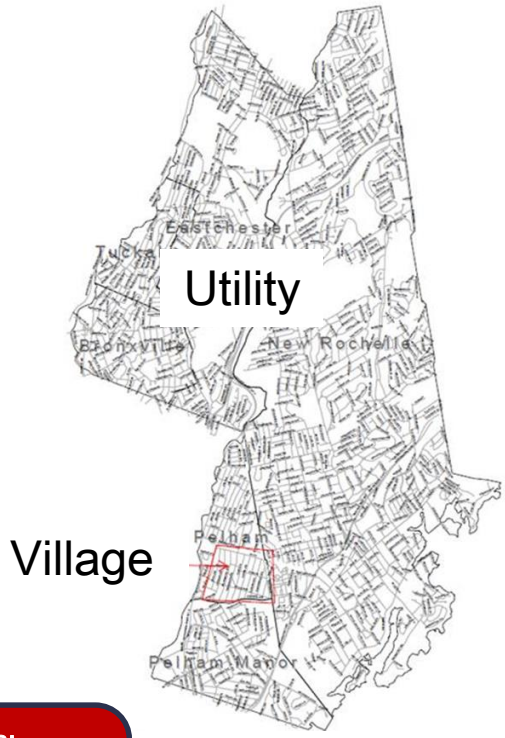
Case #1 – The Village

Scenario:
- Small village owns pipes, valves and meters for a 300-connection water system with 42 fire hydrants
- Buys its water wholesale from larger utility surrounding it

Village Issues:
- Village customers pay 27% more for water services than surrounding neighborhoods
- System is out of compliance with metering and fire protection regulations

Utility Issues:
- Needs $100,000 investment
- Needs to bill for hydrant services
- Revenue decline, direct billing vs. wholesale rate
- Assets fully depreciated, original cost +$5M

Solution:
- Utility acquired Village system for $1
- Invested in compliance, metering and consolidated rate into larger single tariff district
- Customers immediately benefited from lower rates and sustainable water planning



Key Regulatory Needs:
- Single Tariff Rates
- Hydrant Billing
- Time to achieve compliance

Case #2 – Distressed IOU

Scenario:
- Small IOU, with 1000 connections, owned by same family for decades
- Complex with 14 well systems mostly not connected
- Death of principal with no estate left utility unmanaged and financed
- Water stopped flowing

Distressed IOU Issues:
- Complete compliance failure
- Unpaid vendors refusing to work or support needs
- No customer bills for 9+ months
- No books or records to rely upon

Utility Issues:
- Immediate need for water; trucked in
- Needs +$1,00,000 investment
- Create customer records from scratch
- No rate base
- Near existing operations, but not connected

Solution:
- Utility assumed operations under State order
- Accrued cost to create a “rate base”
- Filed for a decision to own utility and consolidate into larger single tariff district

Key Regulatory Needs:
- Take over mechanism
- Single Tariff Rates
- Time to achieve compliance

February 14, 2017 Cases in Water Industry Fragmentation

Case #3 – Stretched Town

Scenario:
- Town of 10,000 stretched with Pension Liability and Sewer Debt service
- Major investment in water/wastewater required for compliance and to support growth in region

Stretched Town Issues:
- Needs >$40M to sell assets free and clear; cannot transfer debt to private entity
- System is reasonably maintained and run, but at a high cost to comparative communities

Utility Issues:
- Books & Records support only <$30M in rate base
- Cost of Service tariffs not in place, rate overlap
- Revenue depends upon wholesale agreements

Solution:
- Utility offered a long-term Concession, paying an upfront fee of $45M to be amortized into new rates, using Private Equity Investor
- Suez operates and maintains under contract with investor

Key Regulatory Needs:
- Fair Market value Pricing
- Water to Sewer Single Tariff

Case #4 – NOV Township

Scenario:
- Township of 8,000 has racked up >$2M in fines & penalties from EPA
- State has been patient, but is now demanding Township do something, and/or face a forced solution

NOV Township Issues:
- Water system is solvent and well run; issues affect wastewater systems
- Significant capital required to bring into compliance
- Challenges are beyond Township's capabilities to resolve

Utility Issues:
- Who is responsible for NOVs?
- It will take several years to permit and build correct solution to challenges
- Single tariff exists for water, but not sewer
- Existing 'cross subsidy'

Solution:
- Acquire both water and wastewater systems.
- Water folds into a larger single tariff district
- Wastewater consolidated into rate filing, but not yet single tariff
- A multiyear compliance plan agreed to with regulators

Key Regulatory Needs:
- Take over mechanism
- Fair market value pricing
- Water & Sewer Tariff
- Single Tariff Districts
- Time to meet compliance

Key Recurring Themes

- Single tariff – large districts/regions
- Fair market value pricing at take over
- Time to achieve compliance requirements after takeover
- Combined cost of service for sewer and water
- Take over mechanism for highly distressed systems

NARUC

Winter Committee Meetings

Committee On Water