



# AMERICAN WATER

## INFRASTRUCTURE REPLACEMENT PROGRAMS TRA PRESENTATION

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# American Water – History and Operations



American Water Footprint January 2011

- Heritage dates back to 1886
- Largest U.S. water and wastewater services provider
- Serves more than 15 million people in more than 1,600 communities
- Operations in more than 30 states and parts of Canada
- More than 7,000 employees



## Facts & Figures *(owned Assets)*

- More than 370 individual water systems
- 49,000 miles of mains and collection pipes
- 80 surface water treatment plants
- 690 groundwater treatment plants
- 1,000 groundwater wells
- 60 wastewater treatment plants

## Old Pipes = Failing Pipes



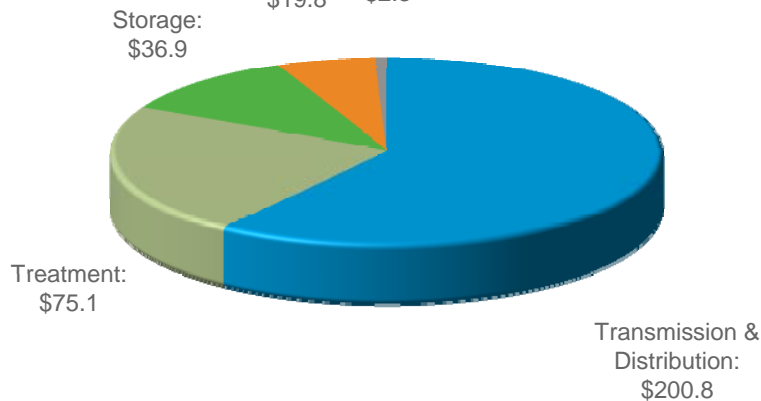
# Challenge of Infrastructure Replacement and Capital Attraction – > \$1 Trillion/20 Years for Water and Wastewater

US EPA Estimated 20 Year Total Needs of US Public Water Systems

American Society of Civil Engineers (ASCE) grades US infrastructure

Total: \$334.8 Billion

Source: Other:  
\$19.8 \$2.3



**Drinking Water** America's drinking water systems face an annual shortfall of at least \$11 billion to replace aging facilities that are near the end of their useful lives and to comply with existing and future federal water regulations. This does not account for growth in the demand for drinking water over the next 20 years. Leaking pipes lose an estimated 7 billion gallons of clean drinking water a day.

**Wastewater** Aging systems discharge billions of gallons of untreated wastewater into U.S. surface waters each year. The Environmental Protection Agency estimates that the nation must invest \$390 billion over the next 20 years to update or replace existing systems and build new ones to meet increasing demand.

**2009 GRADE: D-**

- 2009: \$335 billion
- 2005: \$277 billion
- 2002: \$154 billion

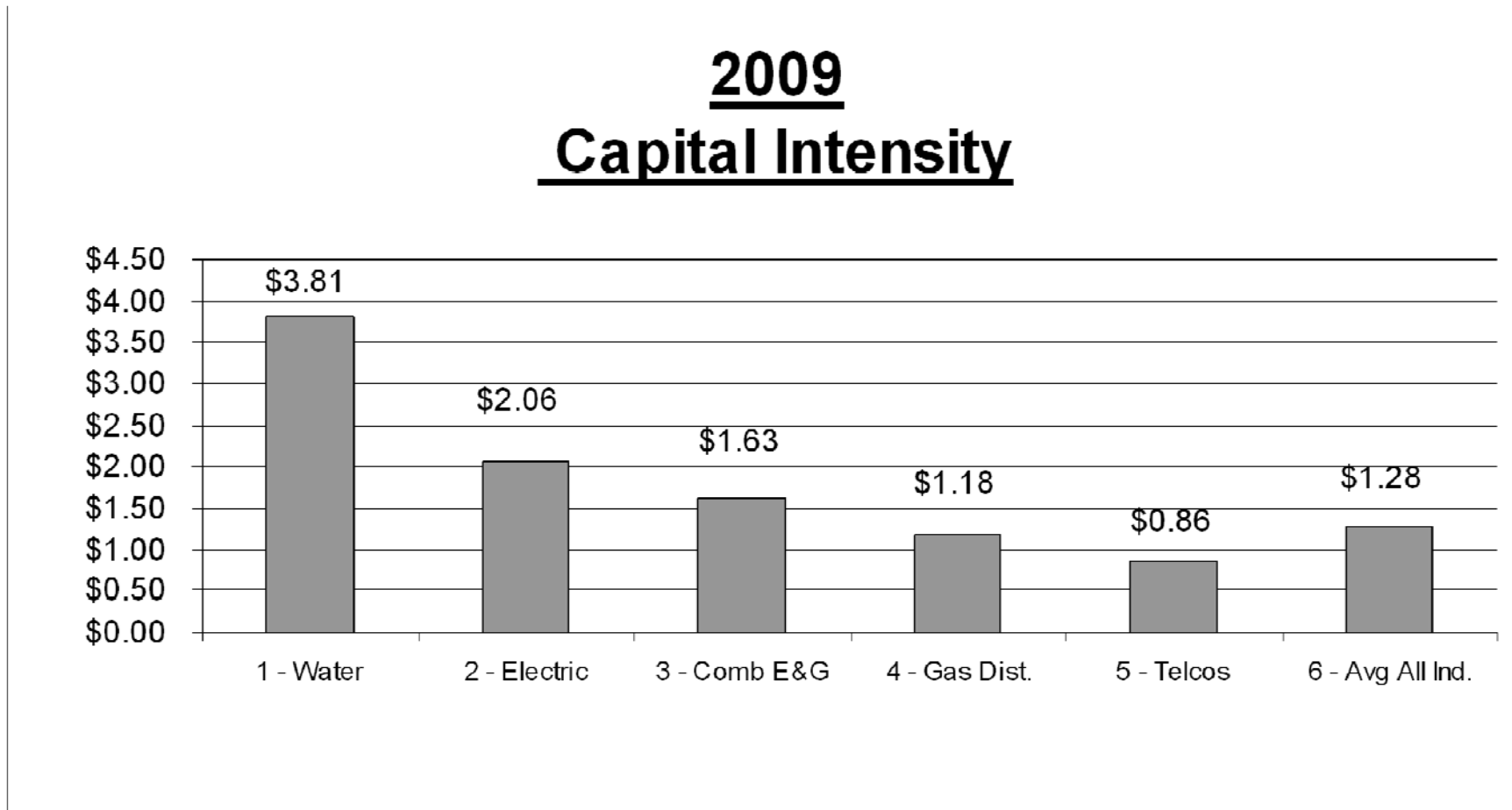
Tennessee: \$3.5 B

- 2009 Grade: D-
- 2005 Grade: D-
- 2001 Grade: D

**Wastewater: 2002 US EPA Gap Analysis - \$331 Billion - \$450 Billion/20 Years**

Source: U.S. Environmental Protection Agency's 2007 Drinking Water Infrastructure Needs Survey and Assessment. In billions, adjusted to January 2007 dollars.

## No Utility Sector is More Capital Intensive Than the Water Industry



Source: AUS Utility Reports – May 2010

## American Society of Civil Engineers (ASCE): A New Perspective – Failure to Act Report (2011) \*

- **Purpose of report:** provide an analysis of the economic implications for the U.S. of continued underinvestment in infrastructure.
- **Annual capital spending gap for water infrastructure:**
  - 2010: \$54.8 billion
  - 2020: \$84.4 billion
  - 2040: 143.7 billion

Estimated economic costs for U.S. households and businesses due to unreliable water and wastewater infrastructure. (Does not include costs to replace necessary infrastructure)

	Costs 2011-2020 Cumulative	Costs 2021-2040 Cumulative	Costs 2011-2040 Cumulative
Household	\$ 59 billion	\$ 557 billion	\$ 616 billion
Business	\$147 billion	\$1.487 trillion	\$1.634 trillion
Total	\$206 billion	\$2.044 trillion	\$2.250 trillion

\* <http://www.asce.org/failuretoact/>

# American Society of Civil Engineers: Jobs

- **Failure to Act Report (2011): at risk jobs**
  - 700,000 (2020)
  - 1,400,000 (2040)

“The impact on jobs is the result of costs to businesses and households managing unreliable water delivery and wastewater treatment services.” (Report, page vii)

# Regulatory Lag and Negative Impact on Capital Attraction

- **Regulatory Lag**: The time between when the utility incurs an investment or cost and when it can begin earning a return of and on the investment or recovery of the cost , during the traditional regulatory process.
- **Negative Impact of Regulatory Lag**: Permanent impairment of the ability to earn a return on invested capital which the commission has determined is appropriate.

Infrastructure replacement programs help mitigate regulatory lag, incent needed investment, improve service quality, and provide for rate moderation.

## Infrastructure Replacement Surcharge Programs: Programs Can Differ But Contain Common Elements

Applicability	Timed Frequency of Surcharge	Recovery Cap	Reconciliations
Water Water/Wastewater	- Quarterly - Semi-Annually - Annually	3% - 10%	Generally annually or at time of surcharge

- **Included plant (all or some combination)**
  - Replacement/reinforced mains
  - Valves services
  - New facilities due to changes in law/regulations
  - Main cleaning and relining
  - Meters and hydrants
  - Leak detection equipment
  - Main extensions
  - Unreimbursed relocation expenditures
  - Land or land rights associated with qualifying plant
  - Wells
  - Looping dead ends
  - Sewer: force to gravity collection mains, services, man holes, lift stations

## Ratepayer Protection

- **Qualifying plant generally limited to plant which is not designed for the purpose of producing new sales revenues.**
- **Caps that result in low impacts on customer bills.**
- **Reconciliation procedures to protect against over-earning, insure only qualifying plant is included and that it has been or will be installed as planned.**

- **Infrastructure Replacement Surcharges: currently exist in at least 8 states (CT, DE, IL, IN, MO, NY, OH, PA)**
- **Approximate Utility Plant Placed in Service Under Infrastructure Surcharge Programs (AW)**

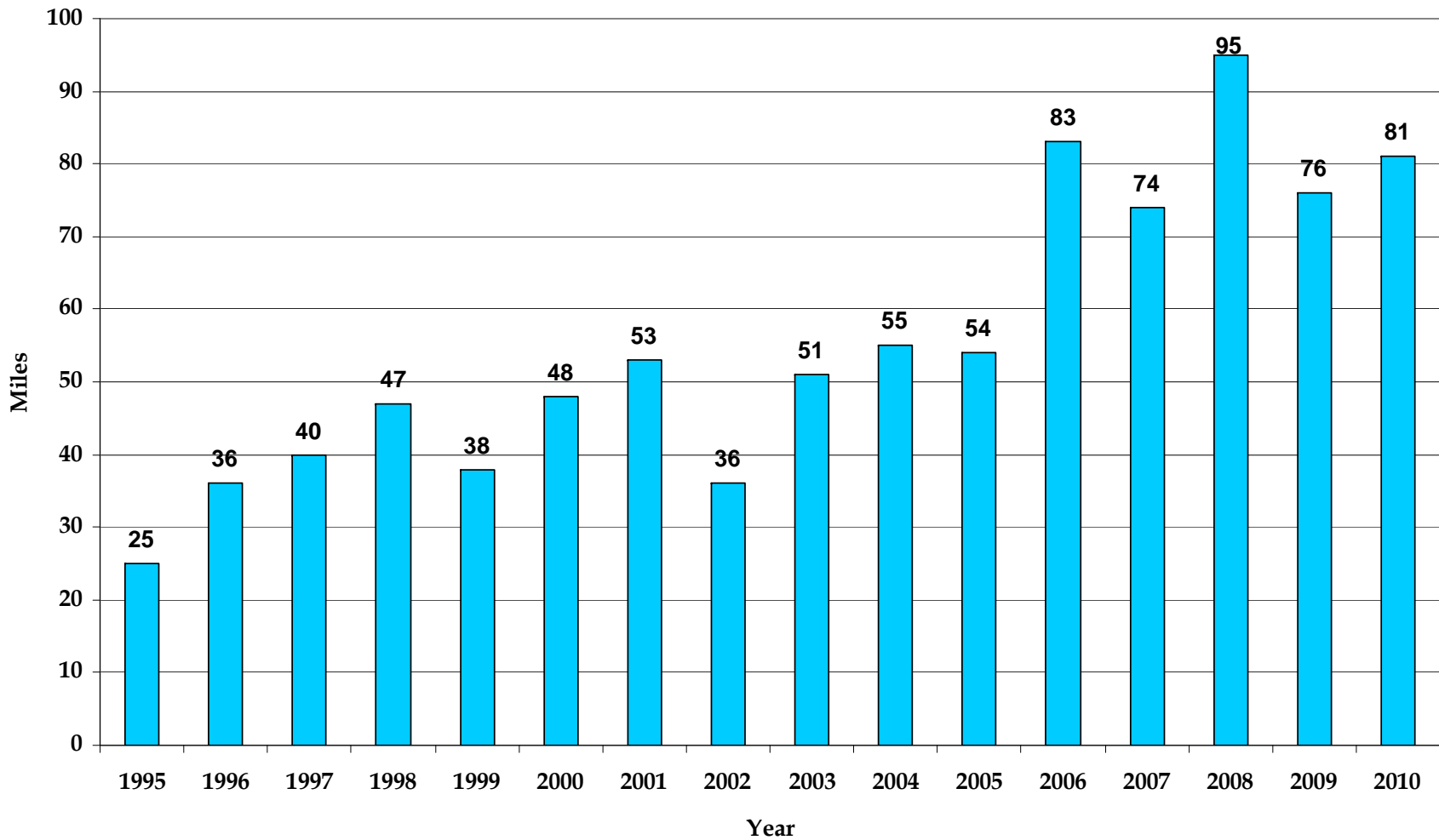
Illinois QIP (2005 - 2008)*	\$ 34,568,337
Indiana (2003 - 2008)	\$ 68,289,680
Missouri ( 2003 - 2008)	\$ 143,576,508
Ohio ( 2005 - 2008)	\$ 3,350,057
New York (2004 - 2008)	\$ 10,080,000
<b>TOTAL (without Pennsylvania)</b>	<b>\$ 259,864,582</b>
<b>Pennsylvania (1997 - 2007)</b>	<b><u>\$ 557,000,000</u></b>
<b>TOTAL - AW</b>	<b>\$ 816,864,582</b>

\* Dates do not necessarily correspond to authorization of DSIC-like program because of rate case timing

## Focus on Pennsylvania

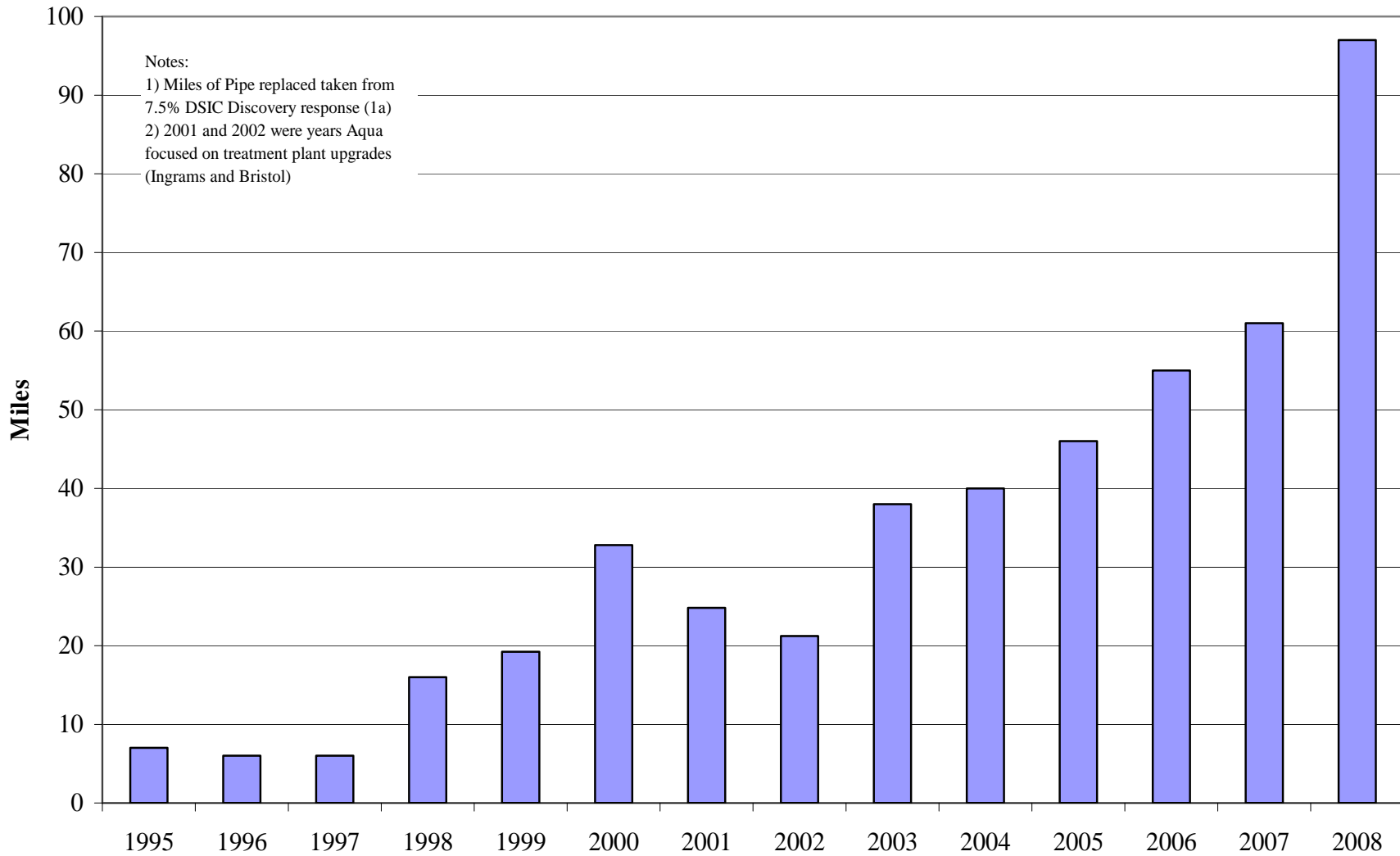
- **Pennsylvania Distribution System Improvement Charge (DSIC) has been in effect longer than any other program in the water industry (1997)**
- **Thirteen years of experience and positive results**
- **Virtually no customer complaints**
- **Characteristics**
  - Quarterly adjustments
  - Cap = 7.5% (increased from 5%)
  - Applies to replacement services, meters, hydrants, mains, valves, mains to eliminate dead ends and to promote regional solutions, main cleaning and relining, and unreimbursed highway relocations
- **Reconciliations**
- **Rate cases go from about every year to about every 3 years**
- **Commission advocating expansion of water programs to other utility industries**

## Pennsylvania American Water: Miles of Pipe Replaced



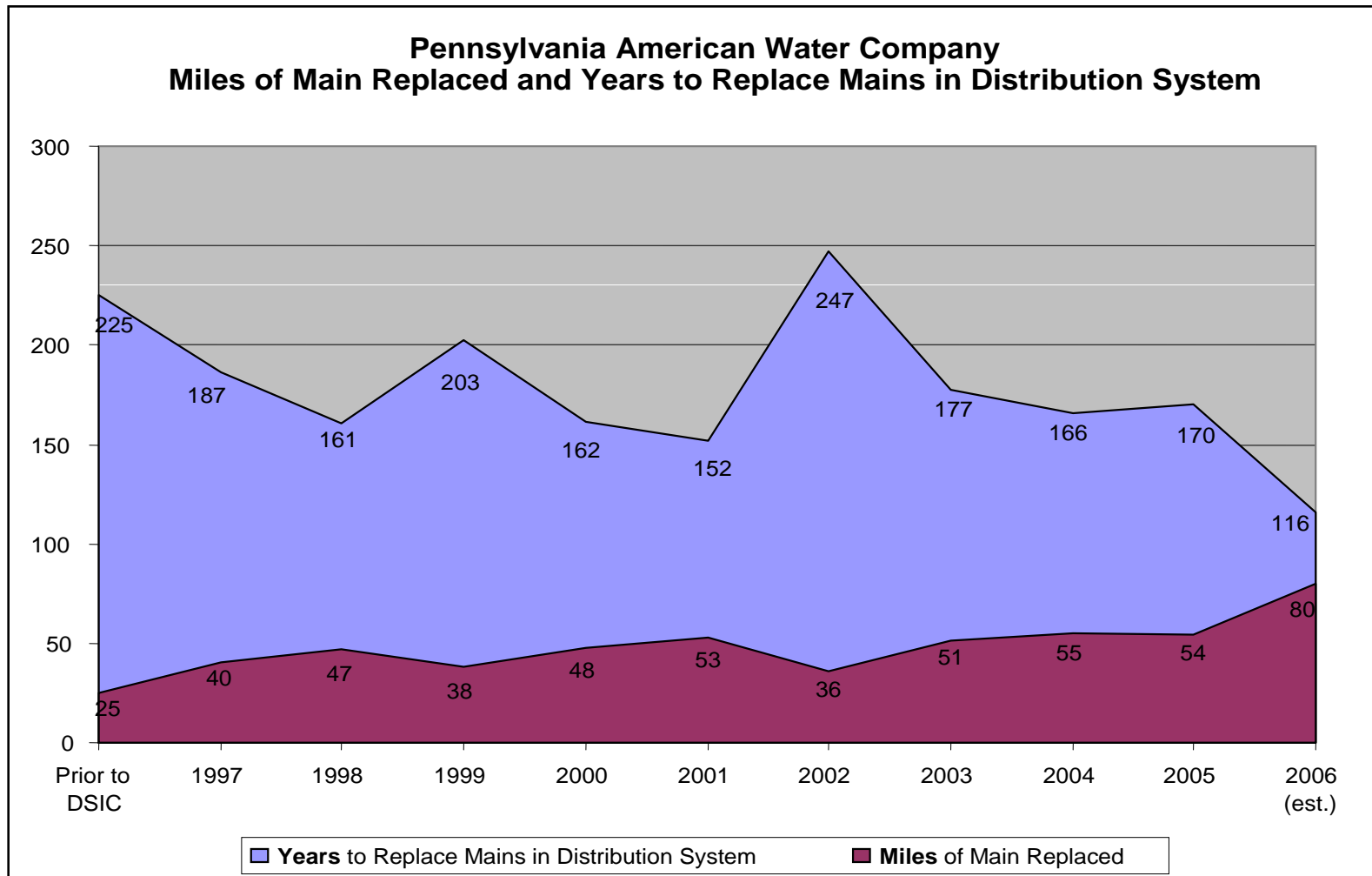
Source: Steve Klick, Executive Policy Manager, PA PUC

## Aqua PA - Miles of Pipe Replaced



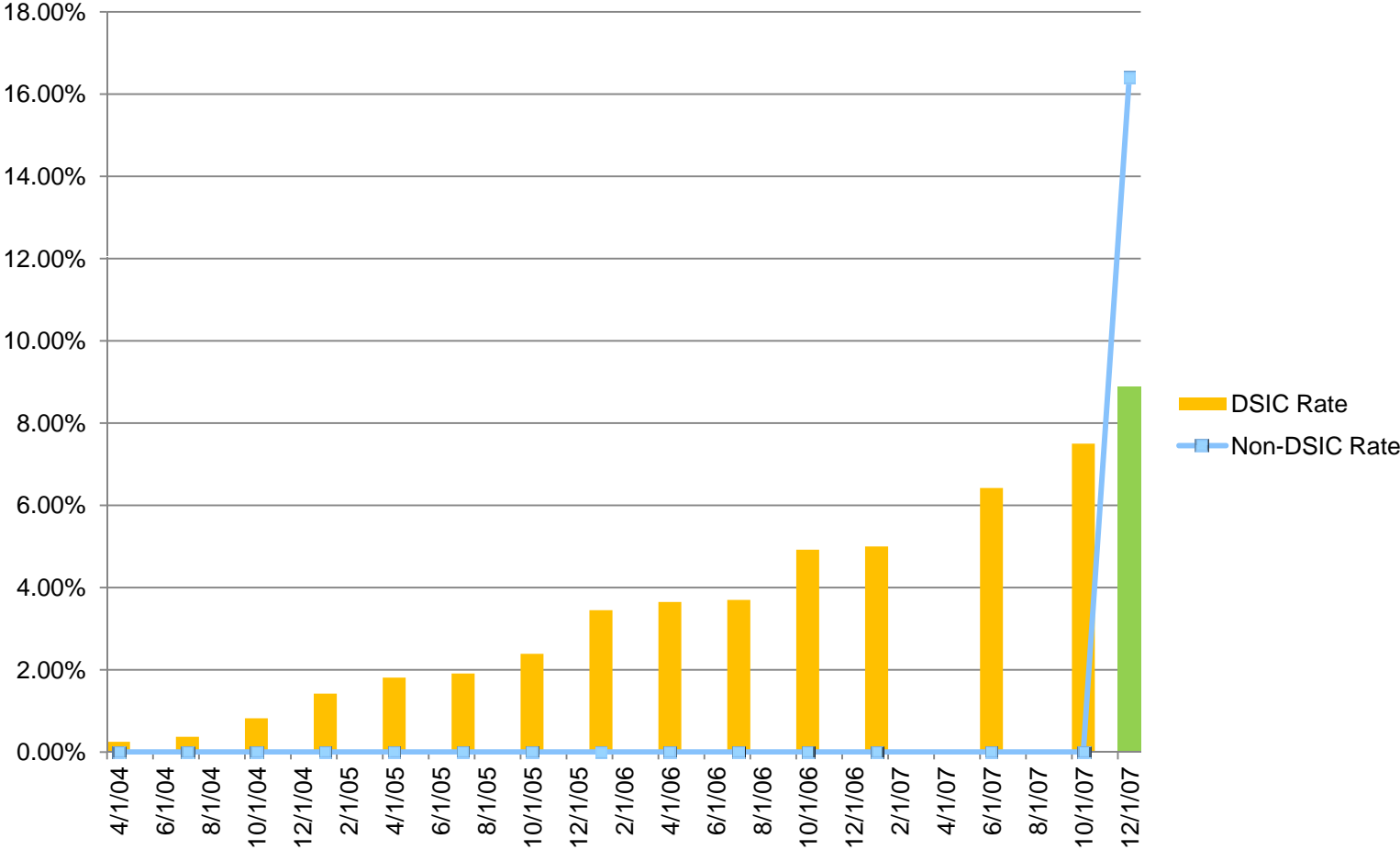
Source: Steve Klick, Executive Policy Manager, PA PUC

## DSIC: Main Replacement Program



Source: Steve Klick, Executive Policy Manager, PA PUC

# DSIC Rate Gradualism Smaller Rate Increases Over Time



Source: Steve Klick, Executive Policy Manager, PA PUC

## Hypothetical Impact on Customer Bills \*

DSIC MAX (% of revenues)	Typical Average Monthly Residential Bill	MAX DSIC Surcharge Per Month	Then Current Surcharge %	Then Current Surcharge Per Month
5%	\$40.33	\$2.02	0	\$0.00
5%	\$30.53	\$1.53	2.49%	\$0.76
3% / yr / 3 yrs	\$35.07	\$1.05 (each yr for 3 yrs)	0.00%	\$0.00
10%	\$21.50	\$2.15	2.10%	\$0.45
7.50%	\$42.64	\$3.20	2.44%	\$1.04

- Impact on customer bills is typically lower than the applicable cap on billed revenues because plant is invested over time and surcharge is reset to zero at time of general rate case.

\* But based on actual experience at a point in time

# Benefits of a DSIC Program

- Accelerates the replacement of aging infrastructure, improving water quality and service.
- Proactively addresses main breaks, using cost and reliability measure to prioritize projects.
- Allows coordination and sharing of paving costs with DOTs, local government, and other utilities.
- Promotes acquisition of small and non-viable water systems.
- Includes a number of customer safeguards: cap on DSIC rate, annual reconciliation and hearing, earnings test, audits, customer notice requirements.
- Other benefits
  - Promotes economic development
  - Less property damage
  - Less traffic disruption
  - Facilitates street repaving projects

## Highlights of Testimony of Chairman Robert Powelson Before the Pennsylvania House of Representatives Consumer Affairs Committee (April 28, 2011)

- The need to replace aging infrastructure is a massive and expensive challenge in Pennsylvania and across the nation.
- The current ratemaking model does not adequately address these challenges.
- Infrastructure replacement programs will reduce regulatory lag and encourage less frequent base rate case filings, saving utilities and customers millions in rate case expenses.
- The DSIC is one of the most important regulatory tools of the past decade.
- DISC has been so successful it should be expanded to other sectors of the utility industry, including natural gas and electricity.
- The water and wastewater infrastructure surcharges will provide ratepayers with improved service quality through fewer main breaks, less frequent service interruptions, increased safety, and lower levels of uncounted for natural gas and wastewater.
- DSIC also provides for greater rate stability and lower costs by properly incenting capital investment to replace aging infrastructure.
- Many ratepayer protections exist with regard to a DSIC program to ensure it is properly implemented.

## Perspectives of Those Who Provide Capital and Rate Credit Quality

- **Standard & Poor's**

“Notably, the [S&P] analysis does not revolve around "authorized" returns, but rather on actual earned returns. We note the many examples of utilities with healthy authorized returns that, we believe, have no meaningful expectation of actually earning that return because of rate case lag, expense disallowances, etc.

...

A regulatory approach that allows utilities the opportunity to consistently earn a reasonable return is a positive factor in our view of credit quality.

...

We analyze the issue of "regulatory lag" in a comprehensive manner and not just as a matter of the efficiency of the regulator in completing rate cases.

...

We do not view the issue of regulatory lag as an intermittent concern, consequential only during times of acute inflation or rising capital spending, but as a consistent part of our credit analysis.”

*(Standard & Poor's, Ratings Direct on the Global Credit Portal, [Assessing U.S. Utility Regulatory Environment](http://www2.standardandpoors.com/spf/pdf/events/util2010art1.pdf), March 11, 2010) (<http://www2.standardandpoors.com/spf/pdf/events/util2010art1.pdf>)*

## Perspectives of Those Who Provide Capital and Rate Credit Quality

- **Fitch Ratings re: Upgrade of Kansas City Gas & Electric**

“Credit quality has improved as a result of a constructive regulatory environment in Kansas.

...

The Kansas Corporation Commission (KCC) and the Federal Energy Regulatory Commission (FERC) allow Westar to use cost recovery mechanisms for certain expenditures that lessen regulatory lag and provided stability to the financial profile. Of particular importance are cost recovery riders for environmental and transmission capital expenditures.”

(Business Wire Article entitled, Fitch Upgrades Westar's & KGE's Ratings; Outlook Stable, May 31, 2011)(<http://www.businesswire.com/news/home/20110531006811/en/Fitch-Upgrades-Westars-KGEs-Ratings-Outlook-Stable>).

- **Janney Montgomery Scott LLC**

“Infrastructure surcharge mechanisms such as the one being considered by the NJ BPU are critical in our view, because they help to minimize the impact of so-called “**regulatory lag**” on realized equity returns.”

(Remarks of Ryan M. Connors, Director – Water/Infrastructure, Janney Montgomery Scott LLC before the New Jersey Board of Public Utilities, March 16, 2011) <http://www.nj.gov/bpu/pdf/water/connorsjanney.pdf>

## Other Rate/Revenue Stability Issues: Purchased Power Cost Stabilization Adjustment (PPA)

- **Increasing Power Costs**

- For American Water system, electricity accounts for about 30% of all non-labor O&M
- For Tennessee American Water, the Electric Power Board of Chattanooga adjusted the fuel cost component of electric service 13 times since 2008
  - ◆ Between issuance of 2008 rate order and 2010 rate recommendation, cost of power increased over 30%
  - ◆ With quarterly PPA, power increases would have been gradually phased in
- Advantages of PPA
  - ◆ Revenue stability/enhancement of opportunity to earn allowed return
  - ◆ Potential to extend time between rate cases
  - ◆ Customer rate gradualism and moderation (avoid rate shock)

# Other Rate Stabilization Issues: Decreasing Per Capita Consumption

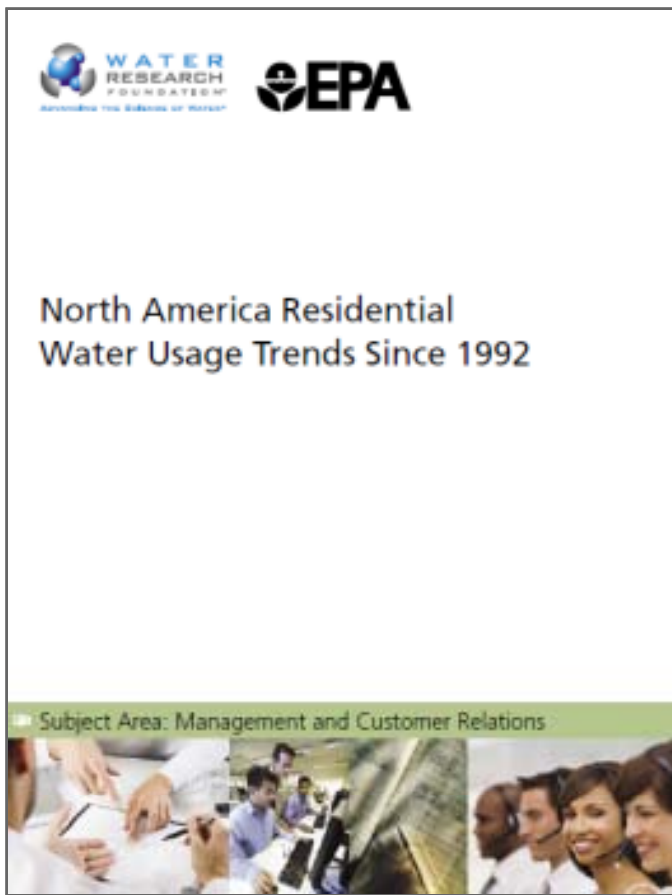
- **Drivers:**

- National policy driving building codes and high efficiency plumbing and indoor appliances
  - ◆ Energy Policy Act of 1992
  - ◆ Energy Policy Act of 2006
  - ◆ Energy Independence and Security Act of 2007
- Water efficiency programs, customer conservation, ethics and awareness
- Economic conditions, price elasticity
- Decreasing average household use

- **Results:**

- American Water 10-year trend for 10 largest states (2000 – 2009)
  - ◆ Average annual decline: -1.28%
- American Water five-year winter trend (2005-2009): to eliminate weather impact and to better represent recent economic and demographic conditions
  - ◆ Average annual decline: -1.73%

# North America Residential Water Usage Trends Since 1992 – Water Research Foundation Report Project #4031 (2010)



- “A pervasive decline in household consumption has been determined at the national and regional levels.” (p. xxviii)
- “Many water utilities across the United States and elsewhere are experiencing declining water sales among households.” (p. 1)

# Solutions - Examples of Revenue Stability Mechanisms

- **Long Island American: Revenue and Property Tax Reconciliation Mechanism (RPT)**
  - Surcharge or credit, based on difference between actual net revenues (operating revenues less production costs) for preceding year and the net revenue target as estimated in the most recent rate case (difference is refunded/surcharged over the ensuing year)
- **California: Water Revenue Adjustment Mechanism (WRAM)**
  - Necessary to offset financial instability that would result from Conservation Rates (e.g.: inclining block rate structures)
  - Tracks changes in recovery of authorized fixed costs due to variations in water sales because of conservation or other issues affecting sales
  - Surcharges possible when combined effect of these programs exceeds 2.5% of revenue
- **Tariff Design – higher fixed charges (consider low income customer impact)**
- **Forecasting methods that properly account for trends, not just historical averages**

**WE CARE ABOUT WATER.  
IT'S WHAT WE DO.**



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LISTED  
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