Issues Facing the Water Industry

The Santa Fe Conference
March 14, 2011

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Regulated Operations
American Water – History and Operations

- 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
US Water Profile: 21st Century: Focus on Sustainability

- Water and wastewater infrastructure replacement: $1 Trillion needed!
- Capital intensive/long-lived assets: most capital intensive of all utility services
- Fragmented industry, lack of integrated approach to resource planning and use
- Increasingly stringent regulations
- Decreasing per capita consumption: conservation
- Supply constraints/sustainability: environmental/ecosystem protection, competing uses, climate change
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

- Total: $334.8 Billion
- Source: $19.8 billion
- Other: $2.3 billion
- Storage: $36.9 billion
- Treatment: $75.1 billion
- Transmission & Distribution: $200.8 billion

American Society of Civil Engineers (ASCE) grades US infrastructure

- 2009 Grade: D-
- 2005 Grade: D-
- 2002 Grade: D

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

Challenge to Sustainability: Buried Infrastructure – The Challenge of Leaky Pipes

• In the United States, approximately seven billion gallons of treated drinking water are “lost” each day primarily due to system leaks
  
  Source: American Society of Civil Engineering: 2009 Infrastructure Report Card

• This is approximately 16% of the nation’s total daily drinking water production

• Solutions include the use of technology for leak detection (e.g.: continuous read acoustic monitoring) and programs to incent investment in infrastructure replacement (e.g.: infrastructure replacement surcharges)
No Utility Sector is More Capital Intensive Than the Water Industry

2009 Capital Intensity

Source: AUS Utility Reports – May 2010
The US Water Industry Remains Highly Fragmented and with Limited Investor Ownership

The majority of water systems in the US are owned by capital constrained entities

Challenge of Water Quality:
Safe Drinking Water Act – A Moving Target

- The USEPA has drinking water regulations for more than 90 contaminants.

- The USEPA publishes a Contaminant Candidate List (CCL) to screen possible contaminants for future regulatory decision.

- The latest list (CCL3) was finalized in October 2009 and includes 104 chemicals or chemical groups and 12 microbiological contaminants.


- Challenge of technology to monitor and treat.
Challenge of Decreasing Per Capita Consumption and Financial Viability

American Water Findings – Trend in Residential Usage Per Customer

<table>
<thead>
<tr>
<th>State</th>
<th>Annual Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZ</td>
<td>-1.49%</td>
</tr>
<tr>
<td>CA</td>
<td>-0.89%</td>
</tr>
<tr>
<td>IL</td>
<td>-1.35%</td>
</tr>
<tr>
<td>IN</td>
<td>-1.49%</td>
</tr>
<tr>
<td>KY</td>
<td>-1.14%</td>
</tr>
<tr>
<td>MO</td>
<td>-1.65%</td>
</tr>
<tr>
<td>NJ</td>
<td>-0.94%</td>
</tr>
<tr>
<td>PA</td>
<td>-1.23%</td>
</tr>
<tr>
<td>TN</td>
<td>-1.03%</td>
</tr>
<tr>
<td>WV</td>
<td>-1.41%</td>
</tr>
<tr>
<td>Average:</td>
<td>-1.28%</td>
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</tbody>
</table>

Declines in residential usage per customer have occurred consistently across all American Water state operating companies over the last 10 years (represented by 10 largest companies)

Why?

- Customer conservation ethic
- Conservation/efficiency programs
- High efficiency plumbing fixtures and appliances
- decreasing average household size
- economic conditions

- A pervasive decline in household consumption has been determined at the national and regional levels.” (pg. xxviii)

- Many water utilities across the United States and elsewhere are experiencing declining water sales among households.” (pg. 1)

- “While water conservation is normally seen as positive, this gradual erosion in residential consumption may force utilities to raise rates to provide sufficient revenues for expanding service and replacing old water mains and equipment.” (pg. xxi)

- The report further states, “pricing that recovers the costs of building, operating and maintaining the systems is absolutely essential to achieving sustainability. Drinking water and wastewater utilities must be able to price water to reflect the full costs of treatment and delivery.” (pg. 74-75)
Sustainability Solutions: Promote Water Conservation AND Financial Stability

• Install new water saving fixtures and appliances that meet USEPA WaterSense flow limits by:
  ▪ Providing rebates for low flow toilets, showerheads, washing machines, dishwashers
  ▪ Direct installation for participating customers

• Conservation pricing / rate structure

• Customer education

• Optimize / reduce customer irrigation

Must Consider: Impacts on Revenue/Financial Stability
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
Solutions: Promote Capital Attraction and Mitigate Customer Impact

• In a heavily capital intensive industry regulatory lag is a serious impediment to capital attraction
• Depending on test year rules, the length of rate cases and other regulatory policies, the time between when infrastructure investments are made and when they are reflected in rates can be up to four years or more.
• Infrastructure replacement surcharges
  ▪ Allows recovery of infrastructure investments made outside a general rate case
  ▪ Generally applies to non-revenue producing infrastructure replacement
  ▪ Customer protections (caps on increases, true-ups)
  ▪ Promote rate moderation, customer service and satisfaction
• Pass throughs for charges in O&M over which utility has little control
  ▪ Power, chemical, purchased water, taxes, etc.
• Allows the utility the opportunity to actually earn the allowed ROE
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)

<table>
<thead>
<tr>
<th>State</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois QIP (2005 - 2008)*</td>
<td>$ 34,568,337</td>
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<tr>
<td>Indiana (2003 - 2008)</td>
<td>$ 68,289,680</td>
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<tr>
<td>Missouri (2003 - 2008)</td>
<td>$ 143,576,508</td>
</tr>
<tr>
<td>Ohio (2005 - 2008)</td>
<td>$ 3,350,057</td>
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<tr>
<td>New York (2004 - 2008)</td>
<td>$ 10,080,000</td>
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<tr>
<td><strong>TOTAL (without Pennsylvania)</strong></td>
<td><strong>$ 259,864,582</strong></td>
</tr>
<tr>
<td>Pennsylvania (1997 - 2007)</td>
<td><strong>$ 557,000,000</strong></td>
</tr>
<tr>
<td><strong>TOTAL - AW</strong></td>
<td><strong>$ 816,864,582</strong></td>
</tr>
</tbody>
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* Dates do not necessarily correspond to authorization of DSIC-like program because of rate case timing
Solutions: Integrated Water Resource Management

- Management of the whole hydrologic cycle to achieve a coherent set of water resource policies and uses that balances all reasonable social, environmental, and economic needs in a sustainable way.

*World Commission on Environment and Development*