

2008 NAWC WATER POLICY FORUM

SUMMARY REPORT

April 2008



NAWC
NATIONAL ASSOCIATION
OF WATER COMPANIES



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National Association of Water Companies

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2007 NAWC WATER POLICY FORUM SUMMARY REPORT

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I. ACKNOWLEDGEMENTS

The National Association of Water Companies (NAWC) extends its sincere appreciation to all of the participants in the 2008 Water Policy Forum for their willingness to contribute their time and candid discussion to this event. The Forum Participants and NAWC extend their gratitude to Ms. Sharon Gascon for planning and organizing the Forum.

II. PREFACE

The 2008 NAWC Water Policy Forum is the twelfth annual discussion forum held by the National Association of Water Companies. The Forum was convened on April 20-22 in Amelia Island, Florida.

Participants in this year's Forum represent the water industry, state public service commissions, the U.S. Environmental Protection, consumer advocates, the state drinking water administrators, the reuse association, and Wall Street. The Forum has gained recognition as a major event for the gathering of key public utility commissioners and key stakeholders to enhance communications on pressing water and wastewater issues. The purpose of the Forum is not to reach consensus or develop action steps, but rather the purpose is to share thoughts, particularly information and ideas in the form of best practices, that can be used to build a common understanding of the issues that impact water companies, the customers they serve, and the respective regulatory agencies.

This report provides a summary of the topics discussed in hopes that it will facilitate additional discussion on these issues in the future.

III. 2008 NAWC WATER POLICY FORUM PARTICIPANTS

The Honorable John Betkoski
Commissioner
Connecticut Department of Public Utility Control

Mr. John Bigelow
President
New Jersey American Water

The Honorable John Bohn
Commissioner
California PUC

The Honorable Charles E. Box
Chairman
Illinois Commerce Commission

The Honorable Matthew Carter
Chairman
Florida Public Service Commission

The Honorable Jeffrey Clark
Commissioner
Delaware Public Service Commission

Mr. Nicholas DeBenedictis
Chairman, CEO and President
Aqua America, Inc.

Ms. Heike Doerr
Research Analyst - Water
Janney Montgomery Scott LLC

Mr. Charles Firlotte
President & CEO
Aqurion Water Company

Mr. Paul Foran
Vice President-Regulatory Programs
American Water

The Honorable Jeffrey Golc
Commissioner
Indiana Utility Regulatory Commission

The Honorable David Lott Hardy
Chairman
Indiana Utility Regulatory Commission

The Honorable Terry Jarrett
Commissioner
Missouri Public Service Commission

Mr. Walton Hill
Sr. Vice President, Regulatory Relations
United Water

The Honorable Jon McKinney
Commissioner
West Virginia PSC

The Honorable David King
Commissioner
New Mexico Public Regulation Comm.

The Honorable Erin O'Connell-Diaz
Commissioner
Illinois Commerce Commission

Mr. David Monie
President
SB Water Company

Mr. W. Richard Roth
President and CEO
San Jose Water Company

The Honorable Gary Pierce
Commissioner
Arizona Corporation Commission

Mr. Stephen St. Marie
Chief of Staff to Commissioner Bohn
California PUC

Mr. Richard Sobolewski
Supervisor of Technical Analysis
Office of Consumer Counsel - Connecticut

Ms. June Swallow
Chief
Rhode Island Dept. of Health Office of Drinking
Water Quality

The Honorable Jim Sullivan
Commissioner
Alabama Public Service Comm.

The Honorable J. Dallas Winslow
Commissioner
Delaware Public Service Commission

Ms. Dian Taylor
Chair of the Board, CEO and President
Artesian Water Company, Inc.

Ms. Lila A. Jaber
Shareholder
Akerman Senterfitt

Mr. John Shearer, P.E.
Shearer Consulting Inc.
Water Reuse Association
Mr. Peter Cook
Executive Director
NAWC

Mr. Cade Clark
Director of State Relations
NAWC

Mr. Peter Shanaghan
Team Leader
Office of Groundwater and Drinking Water
USEPS
(via teleconference)

Ms. Sharon Gascon
Deputy Executive Director
NAWC

IV. CURRENT DEVELOPMENTS IN THE USEPA DRINKING WATER PROGRAM

Peter Shanaghan, Team Leader in the United States Environmental Protection of Ground Water and Drinking Water, led the discussion on this topic via teleconference. His presentation covered three parts: a briefing on USEPA's efforts and strategy to address concern over unregulated contaminants in drinking water; general updates on the USEPA National Drinking Water Program; and an update on USEPA's support of full cost pricing to promote a sustainable infrastructure.

A. USEPA'S EFFORTS AND STRATEGY TO ADDRESS CONCERN OVER UNREGULATED CONTAMINANTS IN DRINKING WATER

Mr. Shanaghan briefed the Forum on the "scientific" approach the Agency is taking to evaluate the risks associated with contaminants in the environment so that the necessary action can be taken to ensure clean and safe water. According to Mr. Shanaghan, USEPA is responding to emerging contaminants with a four-prong approach aimed at improving science, communicating risks, identifying partnership and stewardship opportunities, and preparing to take regulatory action when appropriate.

1. Improving the Science

The recent inquiries and media coverage over traces of pharmaceutical and personal care products in drinking water has generated concern and review by USEPA. However, according to Mr. Shanaghan, the USEPA wants to ensure it has reliable information to use prior to any Agency decision on the pharmaceutical issues. Therefore, the Agency is engaged in a research effort with the U.S. Geological Survey and the Food and Drug Administration, focused on answering questions associated with exposure pathways and health effects. They, as well as academic and private sector researchers are studying the occurrence of pharmaceuticals in wastewater, surface water, ground water and drinking water. The National Research Council's Committee on Drinking Water Contaminants has stated that "...scientific disagreements about the public health effects of contaminants and their relative severity are the norm and do not signal a deviation from sound science" but "the committee continues to emphasize the need for expert judgment ... that errs on the side of public health protection."¹

2. Improving Public Understanding and Risk Communication

According to USEPA, the human health risk from unregulated contaminants that has been reported in water is completely uncertain. Therefore, Mr. Shanaghan believes that understanding how to communicate risk in the face of uncertainty is critical. Mr. Shanaghan indicated that USEPA desires to communicate risk, if any, in a way that is meaningful. Useful information should be shared with the public in a timely way as it is generated.

3. Identifying Partnership and Stewardship Opportunities

USEPA recognizes this issue cannot be addressed by EPA alone. Other federal, state, and local agencies and industry will also need to play a role in assessing occurrence and effects of pharmaceuticals, and analyzing their risk, and in determining actions to reduce their concentration in the environment. EPA has also been working to develop and promote good stewardship effort such as a take-back program that would allow consumers to properly dispose of unwanted or unused pharmaceuticals. The

Agency will be working with the Drug Enforcement Administration to ensure that pilot take-back programs supported by EPA are conducted in a manner that is safe and in compliance with federal and state laws and regulations.

4. Taking Regulatory Action When Appropriate

USEPA is also gathering information that will help in the assessment of whether direct regulatory action is warranted. Under the Safe Drinking Water Act (SDWA), the Agency carries out a program to assess contaminants for potential drinking water regulation. SDWA requires EPA to formally decide to regulate or not regulate at least five contaminants from Contaminant Candidate List (CCL) every 5 years. On February 21, 2008, the Agency released the draft CCL3 for public review and a 90-day public comment period. As part of the process to develop the list, the Agency evaluated pharmaceuticals and personal care products to identify those that have the potential to occur in drinking water provided by public water systems. The 104 candidate contaminants on the CCL3 include 93 chemicals and 11 microbiological contaminants.

B. UPDATE ON USEPA'S NATIONAL DRINKING WATER PROGRAM

The public health protection objectives of the SDWA shape EPA's strategic plan. The SDWA requires that standards be set as close as is feasible to the level at which no known or anticipated adverse health effects would occur with an adequate margin of safety. Mr. Shanaghan stated that USEPA wants to ensure that community water systems will receive drinking water that meets all applicable health-based drinking water standards through approaches including effective treatment and source water protection. In so doing, USEPA is using a multiple barrier approach which includes:

- Source Water Protection
- Treatment
- Distribution System
- Monitoring
- Response

C. SUSTAINABLE INFRASTRUCTURE AND FULL COST PRICING

USEPA's long-term strategic focus will be on Sustainable Infrastructure. The objectives are to:

1. Increase the operational, management, structural, technological, and environmental efficiencies of the water and wastewater sectors; and
2. Facilitate sector movement to full cost recognition and recovery.

According to Mr. Shanaghan, there are ten attributes of effectively managed water sector utilities. They are: product quality, employee and leadership development, financial viability, community sustainability, stakeholder understanding and support, customer satisfaction, operational optimization, operational resiliency, infrastructure stability, and water resource advocacy. In an effort to promote sustainable infrastructure, USEPA also supports full cost pricing.

Full cost pricing is defined as a pricing structure for drinking water and wastewater service which fully recovers the cost of providing service in an economically efficient, environmentally sound, and socially acceptable manner which promotes efficient water use by customers. According to Mr. Shanaghan, the key drivers of the cost of service for the water and wastewater industries are the level of service provided and the structure and management of the utility to provide the desired level of service. The level of service is determined by product quality, customer input, fireflow protection, peak flow, reliability, main breaks, consumer inquiries, customer complaints, and field crew interactions.

In an effort to facilitate the move toward full cost pricing, USEPA brought experts together in November 2006 for a workshop held at Michigan State University. The workshop participants found that full cost pricing will be possible and successful only in an efficiently structured and managed water and wastewater sector. In addition, to further demonstrate the importance of full cost pricing, NARUC passed a resolution entitled “Resolution on Exploring the Joint Role of Economic, Environmental, and Public Health Regulators in Promoting Water Infrastructure Sustainability.”

Participant Reaction

Forum Participant Foran noted that effective communications of risk in regard to contaminants in drinking water will alleviate the concern that the consumer will lose confidence in water supply. Illinois Commissioner O’Connell-Diaz and Mr. Foran observed that companies and businesses have already begun to change their advertising practices to indicate that their products use little or no water. Commissioner O’Connell-Diaz emphasized that this is a “tipping point” for the water industry requiring increased collaboration between industry, state commissioners, environmental agencies, and drinking water administrators. With the emphasis on “Earth Day” this year and with the inquiries about pharmaceutical and personal care products found in drinking water, the Forum Participants stressed that collaboration at the state level could be a best practice for this industry.

V. POLICY ON STRUCTURE

A. THE BACKGROUND

Nick DeBenedictis gave the Forum Participants a perspective of the events in the water and wastewater industries that have led to the increased activities associated with mergers and acquisitions.

1. Demographics

The water industry has experienced major restructuring and change over the past 15 years after almost a century of stability through moderate new customer growth in individual franchise areas. The lack of entrepreneurial attitudes, the demographics of the industry (predominately municipally based), and the lack of access to capital markets, as a result of the size of water companies relative to other companies in the utility sector resulted in a lack of growth. By contrast, the largest publicly traded water company was in the 4th quartile of size and cash profitability when compared with the large telephone, electric and gas utility companies which were using major amounts of capital during the 70's, 80's and 90's. Major spending for water and wastewater utilities did not occur until the last two decades as a result of new EPA rules and crumbling infrastructure. Initially when that happened, federal grants were available and the water and wastewater industries municipalized receiving subsidized public loans and major federal grants. Those loan and grant opportunities have now disappeared. As growth continued outside the cities in the outer suburban and rural areas, and as a result of the lack of municipal government's interest in making new investments, more "independent mom and pop" water companies were allowed to develop.

Regulators and public policy makers recognized that this water industry was fragmented, balkanized, and inefficient during the 80's when the new overlay of environmental requirements were imposed on the industry and when the lack of internally generated cash due to low depreciation rates (3%) caused an immense need for outside capital investment. Moreover, this was during the time of high interest rates and competition in the equity and debt markets from financially healthy electric, gas and telephone companies. The results were predictable. Water companies made only EPA-driven investments and avoided needed investment in infrastructure rehabilitation. Companies also avoided acquiring the many small, unprofitable, and cash-needy water and wastewater systems that were causing service problems for environmental and economic regulators.

When natural growth stopped in the suburbs where most of the large publicly traded water companies were concentrated and industrial usage was reduced sharply from plant shutdowns and rationalization more pressure was put on revenue from the remaining residential and commercial customer classes. Moreover, the environmental ethic instilled in the 1970's caused decreased usage by each residential and commercial customer of approximately 1% per year putting extreme pressure on water companies to look for ways to grow. Companies could no longer depend solely on rate cases in order to spread rising accounting, legal and employee benefit costs over a broader base of customers.

2. The Impact of Electric Deregulation and European Water Company Expansion

In the 90's, consolidation and restructuring began to occur. It began with the closely-held large companies buying smaller public and private companies. Only Utilities, Inc., had a unique strategy to work with new developers, buy their systems and wait for a municipality to expand and condemn them at a profit. No one was buying the older troubled systems due to the regulatory risk involving the major

investments needed. Philadelphia Suburban, American Water, and General Waterworks bought small to medium size municipal systems. United (Hackensack), Aquarion (Bridgeport), and Elizabethtown concentrated on non-regulated water entities such as land development, laboratories and operations and maintenance (O&M) contracts. States like Pennsylvania, where small system acquisition policies were developed to eliminate disincentives, saw the larger companies (American and Philadelphia Suburban or Aqua) start consolidating the numerous small systems in the Commonwealth. The mergers among the two dozen or so large companies had begun.

According to Mr. DeBenedictis, these mergers allowed the merged companies to achieve economies of scale and be more financially stable for the significant future investments in needed capital. This was not a challenge to regulators as premiums paid on most of the deals fell under the former accounting rules (pooling of interest) where premium values from one company could be transferred to another without booking good will. Examples were:

- Philadelphia Suburban – Consumers Water Company (now Aqua America)
- American/Avatar – (Indiana, Illinois); NEI (St. Louis Water, Continental Water (Ill.), (Long Island Water); Citizens; United’s Midwest properties (IN, IL, MO). Merger attempt with San Jose Water failed.
- United (Hackensack Water) – General Water
- Aquarion – American’s New England properties (Massachusetts; New York; New Hampshire, Greenwich, Connecticut)

After the deregulation of much of the electric industry in the 1990s, many electric companies had excess cash from selling generation facilities. With the goal of “convergence” of energy and water, the electric industry deployed its excess cash to buy water assets as NiSource/NIPSCO bought Indianapolis Water. Enron bought Wessex Water and created Azurix, Duquesne Light bought small troubled companies in nine states and formed AquaSource; ALLETE (formerly Minnesota Power) bought Florida Water Services in Florida and Heater Utilities in North Carolina; Sierra Pacific Power Company bought Truckee Water Company; and Duke Energy bought the water systems in Anderson, South Carolina and Rutherfordton in North Carolina.

According to Mr. DeBenedictis, the electric industry strategy was a textbook example of a flawed strategy executed perfectly. Ultimately, the electric companies were discouraged by the low returns they were receiving, the heavy capital investments required, and the low depreciation rates. As they decided to exit, the existing water industry began to pick up the pieces of this flawed electric industry strategy. American Water bought Azurix in 2003 as Enron imploded. Aqua America collected the remains of the Duquesne Light buying spree in 2003, and in 2004 assimilated the Allete systems in Florida and North Carolina. Many municipalities condemned some of the electric properties (some claiming deteriorating service). Florida Cities bought some of the ALLETE properties. Duke’s properties were sold to municipalities in North and South Carolina. The City of Indianapolis bought the NiSource system.

Following the electric industry exodus, the large European multi-utility companies then entered the United States domestic water market for what they considered to be “undeveloped opportunities.” However, the European investment in the United States water market was relatively short-lived. Suez bought General Water Works in the 1980’s and sold it to United Water in 1994. Suez took United Water private in 2000 and concentrated on its unregulated businesses. General des Eaux bought 17%

of Philadelphia Suburban Corporation in the 90's and sold it in 2002 when General des Eaux's successor, Vivendi, ran into financial problems. General des Eaux bought 23% of Consumers Water Company in 1987 and sold it to Philadelphia Suburban Corporation in 1999. Thames bought American Water in 2003 and RWE bought Thames shortly thereafter. In 2005, RWE announced that it would divest its ownership interest in American Water and Thames. In 2001, Nuon bought Utilities, Inc. and in 2005 announced its sale of Utilities, Inc. to Highstar II, a subsidiary of a private equity fund formed by AIG. In 1999, Kelda purchased Aquarion and, in 2006, announced it would sell Aquarion to Macquarie Infrastructure, an Australian investment bank and private equity investor.

3. Eminent Domain or Municipalization

In all but a few states, a local governmental agency can initiate condemnation even if the utility is meeting all of its regulatory and service obligations. Use of eminent domain to condemn a utility is not a new or even recent concept. However, Mr. DeBenedictis noted that since the U.S. Supreme Court's Kelo decision, there has been more public attention on limiting government's ability to use eminent domain, and to better define the "public good". In recent years, there has been a greater incidence of condemnation activity involving electric and water utilities in particular because high profile business failures including Enron and WorldCom have damaged public confidence in business. Some government officials mistakenly see the local utility as a source of revenue to solve municipal needs – "a cash cow." In some cases, interest in condemnation evolves from a handful of elected officials who have a personal agenda. For example, elected officials may seek condemnation to prevent growth, to support certain growth, to control growth, or even to remove public service commission jurisdiction. Often, the root cause for an attempted condemnation is not directly related to poor or inadequate utility service, or dissatisfied customers. Mr. DeBenedictis advocates that the real test of public interest should be whether the utility is meeting regulatory and service obligations. Without public service commission jurisdiction, the public cannot be protected from a government owner that minimizes investments to avoid increasing rates, or uses a portion of utility income to subsidize other municipal needs rather than raising taxes. Best practice laws exist in Indiana and Missouri that limit misuse of eminent domain in condemning well run utilities.

B. THE WATER COMPANY RESPONSE

During the last three decades while the Europeans, the electric industry, and now the private equity funds became interested and then disinterested in the water industry as a financial investment, those companies that have been a mainstay in the water industry for over a hundred years continued to follow the regulators' directive to provide safe and adequate service to customers at just and reasonable rates. At the same time, these companies watched the rise and fall of small water companies with inadequate financial and operational resources. They watched the confluence of the explosion in the environmental regulations and industry physical assets reaching the end of their useful lives.

In cooperation with utility commissions throughout the United States, the industry has addressed the various issues referenced above using infrastructure surcharges and environmental cost pass-throughs. At the same time all around them, the small, troubled undercapitalized water companies once created to accommodate a developer's goal to sell homes began to create a black eye for the entire water industry. While addressing its own need to attract capital and maintain customer service and reasonable rates, the traditional water companies began to acquire their weaker sister companies and remedy the issues that plagued these companies. Some states like Pennsylvania and North Carolina implemented

both administrative and legislative remedies. Standard tariff pricing gave larger companies the opportunity to spread the required non-revenue producing capital over a larger base of customers, thus improving service levels to the statutory requirement of “safe and adequate” while at the same time producing “just and reasonable rates.” Legislation was passed permitting recovery of positive acquisition adjustments if the acquiring company fixed the troubled status of the acquired small company.

1. North Carolina Acquisition Process as a Best Practice

According to Mr. DeBenedictis, other state utility commissions, such as the North Carolina Utilities Commission, have coupled recovery of acquisition adjustments with acquisition of small troubled water companies. Under this approach, as the acquiring company buys and fixes a troubled company, one dollar of acquisition adjustment is transferred to rate base for every dollar of acquisition cost and fix up expended by the acquiring company. While this solution is not an overnight fix, it does ensure that over time, the troubled companies will be absorbed by the operationally and financially stronger companies. It will also ensure that customer service will improve, rates will be uniform and reasonable, and the acquiring company will be rewarded for the risk in its efforts to fix troubled companies.

2. Pennsylvania Acquisition Process as a Best Practice

For many years, the Pennsylvania Public Utility Commission has been a strong supporter of strengthening the viability of water and wastewater systems via regionalization and consolidation, noting that improved service can be achieved through resource coordination and economies of scale. The Commission has consistently observed that the acquisition of smaller systems by larger, more viable systems improves the overall long-term viability of the water and wastewater industry, serving to enhance the quality of ratepayers’ daily lives, the community’s economic development and environmental enhancements. The Commission’s efforts to improve system viability is accomplished in many ways, including its ongoing coordination with the Pennsylvania Department of Environmental Protection, Penn Vest (the low-interest revolving loan program), via memorandums of understanding, and with other stakeholders. For over a decade, the Commission has permitted acquisition incentives, including rate of return premiums, deferral of acquisition improvement costs, plant improvement surcharges and acquisition adjustments. The most common, the acquisition adjustment, can be approved when a viable system purchases a smaller system that is in violation of regulatory standards. The acquisition adjustment may be appropriate when the acquisition costs are greater than the depreciated original cost. In such situations, that reasonable difference in costs, as determined by the Commission, may be added to the rate base of the acquiring utility and amortized as an addition to expense over a reasonable period of time with corresponding reductions in the rate base. Recently, in an effort to provide the maximum amount of predictability to the overall process, the Pennsylvania Commission clarified the original cost documentation process. In addition, in cases involving the acquisition of a smaller system that is not at the present time in violation of regulatory standards, but its acquisition can be shown to be in the overall public interest, the Commission may now consider an acquisition incentive claim. Complimentary regulatory mechanisms utilized by Pennsylvania include single tariff pricing, “pass-throughs,” mediation and settlements.

C. STATUTORY REQUIREMENTS

1. The Two Masters

Industry Forum Participants believe that, although unstated in public utility statutes, a state commission is bound to please two masters, the customer and the utility bondholder/shareholder. The state commission, in contrast to a consumer advocate's office must consider "the public interest," not the residential customers, not the commercial customers, not the industrial customers, and not the shareholders individually, but the interests of all of these groups. Thus, in all decisions there must be a balancing to reach the public interest. In the industry's opinion, the easy path of "keep rates as low as possible" is a short-term benefit. In the water industry which depends on major infusions of capital to ensure that infrastructure is kept in service, the easy path of "keep rates as low as possible" is a long-term loss for the customer. The water industry has a need for capital and its assets are long-lived, resulting in low depreciation rates. Consequently, internally-generated funds from depreciation, deferred taxes and return on equity are too low to cover all of the investment capital needed. Thus, municipal and private water utilities will be in both debt and equity markets more often than ever before. The markets, on whom the utility must depend for capital, are jealous masters. If not nurtured and catered to, they will redeploy their capital elsewhere. If supply of a product, including capital, decreases, it is an economic axiom that cost will increase. If cost increases, the cost of capital will increase, thus increasing rates.

All markets expect consistent regulatory treatment to cover the long-term nature of environmental and infrastructure investments. All markets expect reasonable equity returns so water companies will be able to generate enough profitability to pay off the large amount of debt incurred and reasonable dividend yields to equity investors.

2. The Tests

Although there are various means to achieve the same end, public utility commissions, almost universally, are bound by the various state legislatures to the same standards. A Commission must ensure that a utility company provides safe and adequate service at just and reasonable rates. All other public utility statutes and regulations flow from those standards. All proposals, including mergers and acquisitions, if judged against these standards will produce results that benefit the customer and the utility and meet the Commission's statutory mandate.

Because of the capital intensity of the water utility industry, maintaining the same capital base spread over a greater customer base will, all other things being equal, produce lower rates. Thus, Mr. DeBenedictis concludes that, in general, growth and consolidation are beneficial for water utility customers and shareholders.

3. Market Expectation of a State Utility Commission

Both debt and equity markets crave certainty and adequate returns to protect their investments. They reward entities, with greater access and lower cost of capital, if regulatory certainty and adequate returns are provided. Standard and Poor's has noted that regulation is often the defining factor in the ratings of a utility.² Scrutiny of regulation is both qualitative and quantitative. The rating agency assesses the following:

- Are the new rates based on a fair rate of return?
- Is the utility afforded an opportunity to actually earn the nominal rate of return awarded?
- What capital structure is used?
- Is the test year historic, current or projected?
- Are known and measurable changes to the test year acknowledged?
- Does the Commission regulation provide for deferred cost recovery, such as, amortization of rate case expense, tank painting, storm damage, etc.?
- Does the Commission provide for recovery of commodity (fuel/purchased power/gas/water) expense?
- Does the company tariff design reflect greater percentage of fixed costs in the Customer Charge?
- Is regulation flexible enough to acknowledge and address unusual business and economic issues (infrastructure replacement, rising healthcare and pension expense, increasing power expense as electric rate caps expire) as they arise?

4. State Utility Commission Expectation of Markets and Water Utilities

Both at the time of a merger and on an ongoing basis, a Commission must look to water utilities to act in concert with the Commission and its Staff to meet its statutory mandate of providing safe and adequate service at just and reasonable rates. Statutory and case law regarding acquisitions and mergers direct that a Commission must determine if the acquisition or merger is in the public interest, results in net benefits to the customer, or does not harm the customer. Super-imposed on these dictates are the State Utility Commission's overriding obligation to ensure that utilities provide safe and adequate service at just and reasonable rates. Practically speaking, what should this mean for Commissions and those requesting approval to merge or acquire assets? Mr. DeBenedictis believes the answer is simple and the bottom line is, are customers better or worse off after the transaction than they were before the transaction, not just on the day that the transaction closes but in the long term.

A long-term perspective sometimes produces not only a different analysis but also a different answer to the statutory questions that must be answered during consideration of a merger or acquisition. Responses to the following questions should produce a decision with a long-term perspective:

- Does the Commission know the utility, the parent of the utility, and the entities in the chain of ownership of the utility?
- Does the Commission know the representatives of the utility, the parent of the utility and those in the chain of ownership of the utility?
- Has the utility explained, with both words and numbers, and does the Commission understand the structure of the entity owning and owned by the utility?
- Is the new owner committed to maintaining its investment in the utility business long term consistent with the long-term nature of utility assets? Will the new owner agree to an approval conditioned on this commitment?
- How much net income is retained in the business and ploughed back into capital, benefiting customers? What is the payout ratio proposed by the utility?
- What is the new owner's commitment to capital investment? Even if the new owner has large market capitalization, is it willing to commit a portion of that capitalization to investment in the water utility business over a term of years?
- What is the credit worthiness (credit rating) of all entities in the chain of ownership?

- Are the related entities a lower or greater credit risk than the utility?
- Will the acquisition increase the utility risk and/or decrease its credit rating over the long term?
- What is the capital structure of the total consolidated entity at the closing and in the long term? Will the utility parent commit to maintain a balanced structure in the long term as part of the conditions of the sale?
- What protections are in place to ensure that a business or financial problem in a non-regulated entity will not affect the regulated entity?
- Has the utility been a utility of its word in the past, i.e., does it do what it says it will do?
- Has the utility assisted the Commission in achieving its goals in the past? Has it acquired small troubled companies and helped the Commission by assisting smaller companies with service problems? Has the Company acted as an emergency operator for the Commission in the past?
- What does the true capital structure of the utility look like on the date of closing? What is it projected to be in the future?
- What is the magnitude of the Companies non-regulated businesses? Are they a complement to the regulated business, providing additional benefits to customers or a distraction to employees with no net benefit to customers?
- What are the Company's plans for staffing levels after the closing? Do they produce monetary savings at the expense of customer service?
- Will the monetary savings be short-lived?
- Will service improvements result from the transaction?
- Will greater access to capital be a hollow benefit or real? How will it benefit the customer?

Participant Reaction

The water industry policy imperatives are to: 1) maintain financial health and access to capital; 2) continue promoting consolidation of non-viable systems; 3) encourage and promote infrastructure investment; and 4) support customer education regarding the "value" of water. Mr. DeBenedictis noted that the water industry is the only utility that is health-driven. Recent history tells us that a long-term financial and operational perspective is required if the capital needs of the water industry are to be met and the public health responsibilities are to be paramount. Today this is particularly difficult as 85% of customers are served by municipals and 15% are served by investor-owned utilities.

Forum Participants also noted that there is a need for enhanced communication between all of the stakeholders in merger and acquisition cases, even before a case is filed, to ensure that investors understand the nature of the water business and the need for capital investment. Florida Commissioner Carter suggested that companies should consider the dollar amount needed for an aggressive customer education plan in conjunction with an acquisition decision because consumer communication and education is crucial to the process.

VI. FINANCING INFRASTRUCTURE REPLACEMENT – THE IMPORTANCE OF RETURN ON EQUITY AND RISK CONSIDERATIONS

A. THE BASICS

According to Forum Participant John Bigelow, to address the questions posed in the Forum, it is important that the basics of finance and the relationship between capital attraction and risk and return as applicable to the water utility industry are clearly established and understood.

Mr. Bigelow presented this topic to the Forum.

“Capital” is the dollars that a utility company invests to meet the customer service obligation, mandated by each public utility statute. Just as any business or individual decides to take what remains of their income after payment of expenses and invest it, a utility company, too, must provide cash to buy pipe, tanks, booster stations, wells and treatment plants after it pays its operating expenses. Although the concept is the same, utilities generally raise needed capital in the debt and equity markets. According to Forum Participants Bigelow and DeBenedictis, the water industry needs massive investment to replace aging infrastructure, meet increasing quality requirements, and provide access to high quality water to all residents. This in turn requires a return on investment sufficient to pay for the capital required.

Mr. Bigelow reminded the Forum that any discussion of fair returns should start with an understanding of the standards for determining allowed returns for regulated utilities that were established by the United States Supreme Court in the Hope and Bluefield decisions.

In the Bluefield case, the Court determined that a regulated company, “is entitled to such rates as will permit it to earn a return on the value of the property which it employs...equal to that generally being made...on investments in other business undertakings which are attended by corresponding risks and uncertainties.” The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. 3

Similarly, in the Hope case, the U.S. Supreme Court stated that, “the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.”⁴

B. CAPITAL ATTRACTION

An industry only has to attract capital if it cannot generate enough capital internally to replace its existing assets and to reinvest for future growth. The economics of the water industry make capital attraction and reasonable rates of return the sine qua non of a financially and operationally healthy utility, that provides safe and adequate service to its customers. It is the same economic characteristic that makes it so easy for water utilities to fail, either operationally, financially or both, resulting in substandard service to customers.

As stated earlier by Forum Participant DeBenedictis, utilities are the most capital-intensive industry, but the U.S. water industry is highly fragmented with few providers of scale. They have a public health responsibility with great aging infrastructure concerns. It is an industry that is subject to two state regulatory jurisdictions (environmental and economic). Mr. Bigelow reminded the Forum that the water sector is the most capital-intensive of all utilities. That means that it takes more dollars of capital invested to produce \$1.00 of revenue in the utility industry than it does in any other industry. Furthermore, it takes more dollars of capital invested in a water company to produce \$1.00 of revenue than it does in the electric, gas, or telecommunications industries.

On the other hand, service industries, such as legal, medical, financial, or engineering require minor levels of capital to produce \$1.00 of revenue. Manufacturing requires machines, equipment, and large buildings to produce a product. However, none of the manufacturing industries, even the steel industry, requires as much capital to produce \$1.00 of revenue, as does the water industry. Recent statistics show that it takes \$3.29 in capital to produce \$1.00 of revenue in the water industry, while in the electric, gas and telecom industries a capital investment of \$1.46, \$1.41 and \$1.13, respectively, produces a \$1.00 of revenue. Because of capital intensity, water utilities cannot produce enough internal cash (capital) to pay for the hard assets needed to provide service, which requires that they must turn to the external capital markets on an ongoing basis. Running cash negative is a daily fact of life for water utilities, reflecting a normal economic setting. Couple these basic economic facts with the confluence of the significant capital that is needed because of the Safe Drinking Water Act, the Clean Water Act, and the amendments thereto, along with the massive capital that is needed to replace the infrastructure that is reaching the end of its useful life, and you have the production of the “perfect economic and financial storm.”

According to Mr. Bigelow, investors have difficulty understanding a business that operates over long periods of time with negative cash flows. Such investment rouses the danger of “rate shocks.” If returns are reduced, the cost of future investment would go up and the rate at which future investment occurs would go down, which would do both direct and indirect harm in that:

1. Investment for health and security concerns, plus simple infrastructure replacement, would be slowed; and
2. Harm would be done to the local economy generally as fair treatment of investors is vital to economic growth.

Investor confidence is key to providing quality water service.

a. Depreciation Expense

One might argue that water utilities should have been saving for this “rainy day” by putting away funds, in the form of depreciation expense. The response to this argument reveals the second economic factor that sets water utilities apart from other industries and apart from its sister utility companies. Not only are water utilities the most capital intensive, but also, the assets needed to provide service have extremely long useful lives. Extremely long useful lives produce extremely low depreciation rates and extremely low depreciation expense. There are at least two views on the role of depreciation expense. Views differ depending on whether the proponent is an engineer, an accountant or an economist. One view is that depreciation expense is to compensate the investor for the return of his capital outlay, a

return of principal. An alternative view is that depreciation expense is to build a fund to replace the asset when it reaches the end of its useful life, hence the term “Reserve for Depreciation.” The Uniform System of Accounts defines “depreciation” as “the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of utility plant in the course of providing service from causes which are known to be in current operation and against which the utility is not protected by insurance.” Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities. The accounting definition does not look at the physical impact of time on the asset; rather, it allocates the original cost of the plant evenly to each year of the asset life.

Couple the low depreciation rates with the fact that utilities earn on and recover only the original cost of their investment, rather than the current cost to replace the asset and the “perfect financial storm” converts to a financial hurricane. Consider the following example: In the year 1904, 2,000 feet of 16” pipe was installed at \$2.43 per foot and in 2004 the pipe breaks and must be replaced at \$265 per foot. An asset purchased and booked originally at \$4,860, costs \$530,000 to replace. Not only is the cost of pipe more expensive, but the cost of installation, primarily road restoration, is much more expensive. Had the useful life of the asset been shorter, not only would the annual depreciation expense have been higher, but also, in times of inflation, the purchasing power of the recovery of the original cost of the asset would not have been eroded so significantly. The depreciation, contributed by the customers, will provide less than 1% of the cost to replace the asset. To provide the immediate dollars needed to fund the shortfall, shareholders, both new and old, and bondholders are asked to invest in the replacement plant that is needed. Thus, the water utility industry must be much more attentive to capital attraction and the capital markets, because, disproportionately, they must rely on these markets in the near and long-term more than their sister utility companies or their brother manufacturing industries, to provide the capital that is needed for them to provide safe and adequate service to their customers.

b. Contributions in Aid of Construction (CIAC)

CIAC is typically a contribution funded by developers or certain customers to extend service. While CIAC may be a supplemental non-utility source of capital, especially with developer systems, it can become an albatross around the neck of a water company. This is because a return on contributed capital through depreciation expense is typically not permitted on CIAC in most states, and when these zero cost assets are replaced the impact on customer rates is even more significant. Small systems funded with a large percentage of CIAC are especially susceptible to failure because they are affected disproportionately and they cannot access the capital markets at reasonable cost to alleviate the CIAC burden.

c. Economies of Scale

Capital intensity also makes consolidation of systems and rates extremely beneficial to customers. Each capital asset has a maximum capacity, at which it can operate. If the asset, a well, for example, must be installed to serve one or one thousand customers, the return on (rate of return) and return of (depreciation) for the investment will be the same and the capital costs will be spread over the number of customers being served. To the extent that the number of customers being served moves closer to the maximum number of customers that the asset has the capacity to serve, the cost to each individual customer is reduced. Water companies, more than any other industry, need to serve at the maximum

capacity of assets to maintain financial health and minimize customer rates because the capital outlay is so significant. This economy of scale is not possible in small systems and under environmental rules, that require “peaking factors” sometimes twice the daily average demand.

2. Debt and Equity Sources of Capital

According to Mr. Bigelow, the cost of equity is determined and measured in capital markets, not in accounting statements. Capital must be attracted from two sources: the debt markets and the equity markets. Equity is more risky and subordinated to debt and, thus, demands a higher return than debt. The return differential between the two sources of capital makes capital structure an important issue to water utilities as they face massive capital additions. Capital structure affects the overall cost of capital as much as the types of capital employed. If the percentage of equity in a capital structure is too low, the company is viewed as too risky. The result is an increase in cost of capital. If the percentage of equity in the capital structure is too high, the overall cost of capital could be higher even though debt charges should be lower, causing water rates to be increased. Not only is a balanced capital structure important, but it is also important to understand that a “one size fits all” capital structure does not work for all industries for all companies for all times. Companies with low business risk and low capital needs may be able to employ greater amounts of debt (leverage) in their capital structure. However, because it cannot be viewed as having a weak financial structure, the water industry that needs to spend significant dollars on infrastructure replacement and faces changing environmental demands and lower usage of its product cannot demand a highly leveraged capital structure as it repeatedly goes to the markets for capital.

Whether an investor will buy bonds or notes of a water company and at what price is impacted by the rating that a bond is given by one of the debt rating agencies. Whether an investor is willing to purchase stock and at what price is often determined by the opinions of equity analysts and rating agencies on a company. Therefore, these groups are important in determining a water company’s cost of capital and must be viewed as such by water companies and regulators. Since water companies are not considered to be growth stocks, they must depend on a steady stream of increasing dividends to attract capital. Investors in water company stocks look for a dividend yield that is higher than those stocks, which will grow market price and generate positive cash flow over the long term. Water companies must be able to attract capital from those who are typically risk averse, yet willing to invest during the time of an operational and financial perfect storm for the water industry.

C. RISK AND RETURN

As noted earlier, the United States Supreme Court recognized the inextricable connection between risk and return when it ruled that a utility is entitled to a return equal to those earned by other business undertakings with corresponding risks and uncertainties. In addition the return must be sufficient to assure confidence in the financial integrity of the utility and allow it to attract necessary capital.

The determination of what constitutes a fair return on invested capital, or the utility’s “cost” of capital, is usually a major part of any rate proceeding. The cost of debt is usually noncontroversial as it is reflected by the interest rates paid on the embedded debt. However, the determination of a fair return on equity capital, that is, the return required by investors to buy the stock of a utility, is more complex and is usually the subject of expert testimony sponsored by the utility, the commission staff or intervenors.

Through the years, a number of methodologies have been developed to help commissions estimate the cost of equity. Examples include various forms of the Discounted Cash Flow (DCF) model, the Capital Asset Pricing Model (CAPM), the Comparable Earnings Model, Risk Premium Model, and others. Each of these methodologies has advantages and disadvantages. In addition, which model may be appropriate to use may change over time and with changing market conditions or other factors affecting the utility or the economy in general. It is important to keep in mind, however, that regardless of what model is utilized, the result must comply with the fundamental standards established by the United States Supreme Court in terms of returns that are comparable for companies of similar risk and capital attraction ability.

In this regard, it is important to recognize that commissions regulate utilities. They neither regulate investors nor their expectations. Investors will make their own assessments of risk and decide if the expected returns of the investment appropriately compensate for that risk. The commission's role in assessing risk and investor expectations, and matching those expectations with an appropriate "fair" allowed return is determinative of the utility's ability to attract capital at reasonable rates as well as compliance with constitutional standards.

As noted above, part of what will guide investors in making determinations of risk for an industry or company will be the analyses of credit rating agencies, such as Standard and Poor's, Moody's and Fitch, as well as other industry financial analysts. In assessing credit worthiness or risk, ratings agencies look at many factors including various financial ratios such as capital structure (the mix of debt and equity), debt coverage ratios and cash flow. They will also look at business and operating risks, the quality of economic regulation, including allowed returns and regulatory policies that impact the ability of investors to earn timely returns on capital investments. As with any investment, uncertainty adds to risk. In addition, for regulated, capital intensive industries, such as the water and wastewater industries, regulatory policies that promote or prevent the timely recovery of returns of and on invested capital are particularly important. In this regard, it should be noted that analysts will not only look at the equity returns a commission authorizes, but the likelihood that the utility will actually earn the allowed return. While utility management obviously plays a crucial role in achieving allowed returns, so do regulatory policies and actions. For example, disallowance of legitimate, reasonable operating expenses and regulatory lag (the time between when an investment is made and a return is realized in rates) will prevent a utility from actually earning the allowed return and will be a factor in analyzing credit worthiness.

The ratings ascribed to a utility by the ratings agencies are extremely important because they will determine the interest rates the utility will have to pay for debt capital and will therefore directly affect costs to customers.

The Forum Participants noted several of the fundamental characteristics of the water and wastewater industries that impact risk and capital attraction. These are the massive infrastructure investment requirement, capital intensity and low depreciation rates of the industry, as well as the extreme fragmentation that inhibits economies of scale and compliance with ever increasing quality standards. Another factor unique to the water industry is that it is the only utility service that is actually ingested into the body. This in itself creates unique issues of trust with our customers, with direct impacts on public health. This, plus increasing quality requirements, makes the industry susceptible to lawsuits seeking damages for alleged contamination of water supplies, in some cases even if the utility is or was in compliance with all then existing quality standards.

Recent reports about the possibility of trace amounts of pharmaceuticals in certain water supplies are an example of the sensitivities that can surround the provision of a service that people actually ingest. As stated earlier, USEPA has not established any standards with regard to pharmaceuticals and uncertainty exists with regard to what, if any, requirements may be imposed, as well as with regard to any implications these potential contaminants may have on legal liability of service providers.

Consolidation of the industry to achieve economies of scale and reduce the problems created by thousands of small, financially and technologically non-viable systems, also poses risks for utilities. Acquisition of such systems often entails immediate needs for capital investment to correct system deficiencies and non-compliance issues, as well as hidden environmental, legal, and other risks. How regulators deal with these issues and their ratemaking implications directly impacts the risks of these acquisitions.

The water and wastewater industry is fragmented not only with regard to the number and types of systems; it is also fragmented from a regulatory perspective. For example, there is no national economic regulator for water, similar to the Federal Communications Commission or the Federal Energy Regulatory Commission. State economic regulators, with some exceptions, generally only regulate investor owned water companies, with thousands of municipal and other government providers regulating only their own systems. Quality regulation by the USEPA is totally unconnected with economic regulation. This all contributes to uncertainty and poses significant challenges to developing coherent water policies and achieving necessary economies of scale.

Global climate change issues and persistent drought conditions in many areas of the country also directly impact the water industry in unique and uncertain ways related to sources of supply, sustainability, energy usage, and other areas. Moreover, homeland security issues now generally account for 3.5% of an IOU's capital budget.

Participant Reaction

The Forum Participants emphasized again that an effective collaborative communications program for the water industry is critical. The communication program should be used to explain “realistic” risk and the differences in the industries (service, manufacturing, electric and telecommunications) versus the risk and needs of the water industry. California Commissioner Bohn raised the question to the Forum of what the water “Business Model” should be. Forum Participant Bigelow responded that the standard appears to allow the industry to spend 2.5 times its profit on capital before dividends can be issued. Forum Participant Sullivan offered his opinion that “rate stability” is better than “rate equity.” In briefing the Forum about the Alabama best practice in regard to rate stability, Mr. Sullivan noted that their process is a stakeholder process that very much involves the consumer advocates, the industry, and the state commission. It involves establishing a “band of return” and reliance upon the regulatory compact. At the end of the process, the companies are subject to audit and oversight by the Commission staff. According to Forum Participant Sullivan, as a sign of success, the companies are not in rate cases everyday at the Commission and the Alabama Commission orders have been upheld.

VII. A WALL STREET PERSPECTIVE

Heike M. Doerr of Janney Montgomery Scott led this discussion.

According to Ms. Doerr, there are a number of reasons investors are interested in the water industry:

- Water is an irreplaceable commodity with stable demand. It is the last monopoly.
- High cap ex requirements drive investment, technology, development, and rate base growth; and
- The industry is still fragmented and consolidation drives growth.

Investors do not like the following characteristics of the water industry:

- Political risk or opposition to private sector involvement;
- Government controls limit profitability and returns;
- Inefficient market pricing and the view that water should be “free” ;
- High capex drives negative cash flow and risk to returns;
- Rate increases are not always dependable and there is regulatory lag; and finally,
- Merger and acquisition activity is at risk of regulatory and political interference.

In the past, markets viewed water utilities as low risk operations. Certain factors indicate that may no longer be the case. With pressure on critical water supplies, costly environmental regulations, infrastructure replacement needs, rising security concerns, high capex requirements, low depreciation rates, regulatory lag, and local political risk, market analysts may now view the water sector as a bit riskier.

A. FINANCIAL IMPLICATION OF CAPITAL INTENSITY

Ms. Doerr summarized the basic industry statistics:

1. It takes over \$3 in capital spending to generate \$1 in revenue at current prices;
2. Water infrastructure has a long asset life, with long depreciation schedules, especially for transmission pipes; and
3. Replacement costs continue to rise, dramatically outpacing the book value of assets in the ground.

However, Ms. Doerr stated that these basic industry statistics mean consistently negative free cash flow, regular access to debt and equity markets to fund cap ex, thus necessitating the need to keep Wall Street comfortable with the “regulatory compact” that fair returns will follow the investment we need to attract.

Wall Street Cap Ex Assumptions are that: 1) capital spending should approximate D&A; and 2) capital spending should be less than operating cash flow. However, Ms. Doerr made the observation that water utility capital spending is very high relative to D&A and operating cash flow. Therefore she questioned the sustainability of this scenario.

B. REGULATORY LAG

According to Ms. Doerr, attracting capital requires investor certainty. Regulatory lag creates uncertainty. Delays on rate case approvals can have significant impact on earnings. Delays or unfavorable treatment of acquisitions can also have a large impact on returns. Ms. Doerr notes that state commissions have implemented various mechanisms to reduce regulatory lag but none should replace or substitute for reasonable allowed ROEs. Regulatory lag can be minimized with:

1. Temporary rate increases
2. Retroactive effective dates
3. Single rate tariff structure
4. Expansion of DSIC
5. Treatment of non-regulated asset sales
6. Long-term project management

C. LOCAL POLITICAL RISK

Local political issues create uncertainty for the market. Examples of this would include a threat of condemnation by local municipalities, local opposition to rate case increases and private sector ownership, and finally, regular changes in political and personnel structure of state commissions.

D. UTILITIES AS RECESSION-RESISTANT INVESTMENTS

On the one hand, demand for drinking water is static and residential consumption is not typically tied to the economy. With large infrastructure needs, capital expenditures in the water industry are not driven by economic indicators. On the other hand, Ms. Doerr made the observation that dividend yields have not kept up with Treasuries and retail investors, with “buy and hold” mentalities no longer own 70-80% of shares.

Participant Reaction

Ms. Doerr has observed that the water utility industry still faces high cap ex requirements that will drive negative cash flow for the foreseeable future. The industry is still primarily reliant on the capital markets for funding (equity, corporate debt, municipal bond debt). Commissions have taken steps to minimize lag but this has not been enough to maintain consistent returns at stipulated levels. Commissioner O’Connell-Diaz and other Forum Participants noted that the industry has to proactively educate and inform on the needs of the water industry, i.e. infrastructure in a way that prevents the “hijacking” of issues and process later on. Accurate information and a thorough understanding of infrastructure needs assists the customers in the long run. Other Forum Participants noted that discussions between state commissions and sister agencies is critical.

VIII. SMALL WATER COMPANY ISSUES

Forum Participant David Monie presented this portion of the Forum discussion.

A. PRACTICES THAT FACILITATE SOLUTIONS TO SMALL COMPANY VIABILITY PROBLEMS

1. Issues and Arrangements Relating to Rates

a. Single Tariff Pricing

The improvements that are necessary to bring a non-viable system into regulatory compliance could result in a rate increase that would be prohibitive if applied against the small, non-viable system by itself. Therefore, according to industry Forum Participants, the implementation of single tariff pricing, or “uniform rates,” could spread these costs over a wider customer base. Single tariff pricing has been used for many years for the electric, natural gas, and telecommunications companies where large service territories can cover diverse geographic locations, but all customers in the same class pay basically the same rates. Missouri used this practice until a 2001 rate proceeding in which Missouri-American Water Company sought rate recognition for its new St. Joseph treatment plant. Although the size of the proposed increase to rate base was substantial, Missouri reversed its policy on single tariff pricing resulting in a negative impact on the ability to ameliorate small troubled systems.

Whatever rate structure is approved, it should provide sufficient revenue to the purchaser to cover the full cost of providing water service, including O&M, capital investments, and a competitive rate of return (i.e. full cost of service rates).

b. Alternatives to Rate of Return Regulation

In the case of many small, non-viable systems, there may be little remaining original cost rate base as the result of accumulated depreciation or large amounts of contributed plant. This could make acquisition of the system financially infeasible for an acquiring entity because there is little rate base left upon which a return can be earned. In such cases, alternate methodologies for setting rates may be necessary, such as the use of operating ratios, instead of rate base, if the acquiring company is going to be in a position to operate the company effectively.

c. Use of Future “Prospectively Relevant” Test Years and Expedited Rate Proceedings

Use of historic test years and the length of rate proceedings could be a real deterrent or disincentive to the ability of an acquiring system to make the capital investments necessary to bring a non-viable system into compliance. The concern is that, in many cases, the acquiring company has to wait to file for rate relief until it has made the capital investments necessary to bring the non-viable system into compliance. Once those improvements are made and the acquiring company has requested rate relief, in many states, the acquiring company then is faced with a rate setting process that could take up to a year or more. The use of future test years and expedited rate proceedings could mitigate these disincentives.

Many small systems do not experience maintenance expenses at a constant level from year to year. Therefore, traditional ratemaking policies that require expenses to have occurred in the test year to be recognized in rates should be modified to assure that the small system will have enough funds to pay for required maintenance when needed. In that regard, the use of averaging methods and, in some cases, the allowance in rates for annual contributions to a maintenance fund are possible methods to help small companies become, or remain, viable.

2. Issues and Arrangements Relating to Return on Investment

If the purchasing utility is to remain viable and continue to have access to the equity capital market, the allowed rate of return must be competitive. When the acquisition of a troubled utility is encouraged or ordered by a state utility commission, the overall acquisition must be structured to assure the purchaser has a good chance of earning a competitive return. For this to happen, not only must the maximum allowable rate of return set by the state commission be competitive but also the rate structure that is approved must provide sufficient revenues so the purchaser has a good chance of realizing that maximum return.

Absent this, from a purely business perspective, there is little incentive for a successful utility to take over a troubled utility. While an emergency takeover of a troubled utility may be necessary in some circumstances because the situation is so dire that public health is jeopardized, the acquiring utility must ultimately be made whole on the takeover or its own financial health and potentially the public's health could be jeopardized.

3. Issues and Arrangements Relating to Compliance

In the case of many small, nonviable systems, capital investments are immediately needed to bring the system into regulatory compliance. A mechanism that provides for recovery of these capital investments outside of the confines of a general rate proceeding is critical to bring nonviable systems into compliance. For example, several years ago, the Missouri Legislature enacted the Infrastructure System Replacement Charge (ISRC), which is similar to legislation in Pennsylvania, Illinois, Delaware, Indiana, New York and Ohio. The ISRC is a mechanism that allows recovery of investment to replace non-compliant or aging infrastructure through a limited issue proceeding, rather than in the context of a full rate case, thus shortening the regulatory time and expense. Industry Forum Participants maintain that some form of the ISRC concept used for this purpose could facilitate the necessary capital investment and make acquisition of the nonviable system more feasible for the acquiring company.

a. Relief from Fines and Penalties

Existence of outstanding fines and penalties against a system, from either federal or state agencies, poses significant obstacles to acquisition. This is especially true where local health authorities or primacy agencies or enforcement authorities may have been holding off enforcement activities against the nonviable operator but then insist on immediate compliance by the acquiring entity. State legislation may be necessary to assure that responsible operators who acquire non-viable systems with outstanding fines and penalties will have such penalties waived and a reasonable compliance schedule established.

First, past and current violations of standards or regulations should not be attributable to the purchasing utility unless it fails to correct the violations in a timely fashion. State and EPA enforcement records should clearly identify that the utility's previous owner is responsible for the occurrence of any violations existing at the time of purchase. The new owner should be classified as being in compliance, provided he is correcting the violations in accordance with the terms agreed to by all the parties. The purchasing company should be given a grace period to correct the violations. The amount of the grace period should be a function of what must be done to correct the violations.

Second, the EPA and State officials should provide documentation to the purchasing company explaining the above circumstances so the company can provide it to anyone who questions its compliance record. To accomplish the above measures, the state commission may need to enter into agreements with the state primacy agency and the relevant EPA regional office that would establish a protocol for implementing the details, including how to document and oversee the commitments of all the parties.

b. PUC Condemnation and Receivership Authority

No one wants to see unscrupulous non-viable system owners profit by holding out for unrealistic or unfair acquisition prices. One way to address this issue is state legislation that would permit the state public utility commission to exercise condemnation authority over small, non-viable systems that are chronically not in compliance with federal and state standards and continuously fail to provide safe and reliable service. In setting fair market value, the state commission would be entitled to consider the history of violations, existing fines and penalties, current system condition and other relevant factors. The system could then be made available to a responsible company at the determined price. Again, however, whatever the price is, the acquiring operator must be able to charge rates sufficient to make the acquisition financially viable and make necessary improvements. Whether this is through rate base, rate of return regulation or some alternative means, such as operating ratios, the system would have to be made financially viable.

4. Issues and Arrangements Relating to Purchase Price

If ordered to purchase a troubled utility, the purchaser has little leverage to get a fair price and may have to pay an inflated price with consequences to his rate of return. If a state commission requires or encourages a utility to purchase another ailing utility and the acquiring utility has to pay a premium acquisition price, the state commission should provide an acquisition adjustment so the acquiring utility is not financially penalized.

a. Acquisition Adjustments

Granting acquisition adjustments with regard to small, non-viable water systems can raise issues of concern. All things being equal, it would be appropriate not to provide incentives for unscrupulous system operators to profit from their failure to properly maintain the water systems. On the other hand, a properly structured policy with regard to acquisition adjustments can play an important role in addressing not only the small company problem but also issues of fragmentation and lack of economies of scale in general in the water industry. Not all small system owners are irresponsible. They may simply not be in a good position to meet the daunting challenges of quality compliance and infrastructure replacement in the future. Their systems have value and any purchase price is likely to include some increment over depreciated book value. Recognizing an acquisition adjustment in these cases may be

appropriate. For example, Pennsylvania has enacted legislation that provides for possible recognition of premiums for systems with less than 3,300 service connections, subject to certain conditions. In addition, premium recovery is possible for systems in excess of 300 service connections if they are non-viable.

Recognition of acquisition adjustments, even where systems are not small or nonviable may also be an effective tool in addressing the small company issues. For example, enlarging the footprint of a financially viable, competent system operator through acquisition of other competent systems could place the responsible operator in closer proximity to non-viable systems, thus making it more economically viable to acquire and operate them. Texas has explicit provisions and standards for recovery of positive acquisition adjustments. Likewise, California legislation has provided for valuing rate base at fair market value for rate setting purposes.

When American Water acquired the water assets of Citizens Utilities in 2001, the company made a proposal in three states whereby the commissions would agree to consider some form of premium recognition if the company could demonstrate value to ratepayers. The basic principle is that if, and to the extent, a business combination produces identifiable savings, service improvements or other benefits to customers, shareholders should have the opportunity to recover and earn a return on the investment (i.e., the premium) required to produce those benefits. This principle is no different than what is involved when a utility invests in a more efficient pump that produces savings. Generally, that investment is allowed in rates. In California and Illinois, such proposals resulted in the ability of the company to partially retain quantifiable and proven savings resulting from the acquisition. In Arizona, it resulted in an acquisition order, which recognizes the possibility of retaining certain quantifiable and proven synergy savings.

Participant Reaction

Forum Participant Monie noted that real, substantive dialogue is needed between the industry and NARUC as it relates to small water systems. Small water systems need viable solutions. Real changes in how rate cases are handled for small systems need to be made since current practices often result in rate case costs exceeding \$100 per customer which is detrimental to both customers and small water system viability. Moreover, there is a need to assure that money is available for necessary maintenance and capital improvements, perhaps establishing reserve accounts funding with surcharges. Many Forum Participants suggested that a serious review should be made in regard to whether small systems should be prevented from starting. However, Forum Participant Swallow noted that some State Administrators including herself prefer small systems over private wells as it is more difficult to regulate and ensure compliance of private wells. With regard to ratemaking, Forum Participant and Consumer Advocate Sobolewski noted that Connecticut has streamlined its rate cases for small systems and they are staff assisted as well.

IX. PHARMACEUTICALS IN DRINKING WATER

Paul Foran offered his insight on this issue and presented information based upon recent testimony from the USEPA. USEPA plans and suggestions for action were summarized in hearings before the Transportation Safety, Infrastructure Security and Water Quality Subcommittee of the Environment and Public Works committee of the United States Senate on April 15, 2008.⁵

A. PERSPECTIVES

1. USEPA

Studies have shown that pharmaceuticals are present in some of our nation's waterbodies. Further research suggests that there may be some ecological harm when certain drugs are present. To date, no evidence has been found of human health effects from pharmaceutical and personal care products in the environment. This includes drinking water sources.⁶

On February 21, 2008, as part of its responsibilities under the SDWA, USEPA released the Draft Contaminant Candidate List (CCL3) containing 104 contaminants for public comment. USEPA considered 287 PPCPs but only one was included on the list.

The 104 contaminants on the Draft CCL3 include 93 chemicals and 11 microbial contaminants. In the absence of reliable data indicating potential risks associated with pharmaceuticals in water at the very low levels at which they have been detected, it would be inappropriate to require monitoring and/or treatment that could carry significant cost, with no evidence of significant risk reduction based on currently available data.⁷

According to Mr. Foran and Forum Participant Shanaghan, the focus should be on contaminants with known significant health risks.

2. American Water Works Association

Pharmaceuticals and personal care products (PPCPs), have been detected in trace amounts in surface water, drinking water and wastewater effluent sampling conducted in both Europe and the United States. Water professionals have the technology today to detect more substances – at lower levels – than ever before. These compounds are being found at levels 1000 times lower than where drinking water standards are typically set. The fact that a substance is detectable in drinking water does not mean the substance is harmful to humans. To date, research throughout the world has not demonstrated an impact on human health from the trace amounts of PPCPs found in drinking water.⁸

The truth is that the concentrations of pharmaceuticals found in water supplies are millions of times lower than a medical dose. Consider that the highest concentration of any pharmaceutical we detected in U.S. drinking water is approximately 5,000,000 times lower than the therapeutic dose. This concentration is roughly equivalent to ½ of an inch in the distance between the earth and the moon, or in terms of time, this concentration would be equivalent to approximately one second in approximately 750 years.⁹

Based upon our four-year study of the health relevance of trace pharmaceuticals, using the highest concentrations found and the most conservative safety factors to protect susceptible populations such as infants and pregnant women, our report will demonstrate that one could safely consume more than 50,000 eight-ounce glasses of this water per day without any health effects. While the report will not be published until later this year, I can tell you that the bottom-line conclusion is that the concentrations of pharmaceuticals we studied are orders of magnitude lower than would pose a public health threat.¹⁰

3. National Resources Defense Council (NRDC)

Although the levels reported to contaminate our waterways are much lower than therapeutic doses, it would be naïve to think of this as “safe”, knowing that the agents are chemically reactive in our bodies, and that we are exposed daily over a life-time to multiple compounds in unknown combinations.

In addition to rectifying the above failures of EPA, some additional elements of a solution may include reducing the unnecessary prophylactic uses of antibiotics and steroid hormones in agriculture, and excessive uses in humans, to tackle the problem at its source. There is no question that we will also need to invest in our waste water and drinking water infrastructure, and to monitor and treat for the chemical contaminants that present the biggest health risks, and that can be removed or reduced using cost-effective methods.

According to NRDC, the bottom line is that our tap water is still the safest choice of drinking water available, but this problem won't fix itself.¹¹

NRDC takes the position that:

- The problem should be tackled at the source, not just at the water and wastewater treatment level;
- Monitoring and treatment requirements should be applied based on which contaminants post the greatest risk to public health that can be removed or reduced using cost effective methods; and
- Tap water is still the safest choice for drinking water available.

4. Pharmaceutical Research and Manufacturers of America

Many technical experts have contributed to the on-going scientific discussions about pharmaceuticals in the environment. The studies conducted to date suggest that it is highly unlikely that very small quantities of even potent pharmaceuticals detected in the environment would be harmful to human health. Dietary exposure to hormones such as the estrogen that naturally occurs in milk and soy products is much higher than exposure to residues of any estrogen-like pharmaceutical in water. Trace levels of antibiotics found in surface waters are far below the concentrations necessary to develop antibiotic resistance in microbes. In summary, there appears to be no demonstrable risk to human health from detected concentrations of pharmaceuticals in surface waters.¹²

B. SCALE

1. How Much is a “Trace” Level

Although pharmaceuticals have been detected in a number of world waters, the amounts at which they are detected – the parts per billion and parts per trillion range – are extremely low. For example, in looking at a number of studies, the maximum reported drinking water level for caffeine was 0.12 parts per billion. At that concentration, a person would have to drink almost 220,000 gallons of water before coming close to ingesting the amount of caffeine that one would get from a six ounce cup of coffee.¹³

2. How Much is a “Trace” Level, or Part-per-Trillion” (ppt)

Mr. Foran provided the following statistics:

* You would have to drink more than 100 million gallons of water containing one part-per-trillion of acetaminophen to get the amount that would be found in an Extra Strength Tylenol.¹⁴

* Many common food items (soybeans, vegetables, coffee) naturally contain phytoestrogens at levels hundreds or thousands of times higher than even the highest levels reported for water.¹⁵

Mr. Foran reported that to date, some research has indicated the possibility for some harm to certain aquatic life, but no evidence has been found of human health effects from PPCPs. No monitoring or treatment regulations currently exist for PPCPs. Any available monitoring and treatment methods are extremely expensive and energy intensive. Water service is already highly energy intensive. Moreover, the effectiveness at monitoring or removing all potential PPCPs has not been established. The treatment methods include reverse osmosis, membranes, ozonation, and ultra violet light. In California, approximately 20% of energy production is used in connection with treatment and transportation of water. A research and technological basis does not currently exist upon which effective regulations can be developed or implemented. Effective testing methodologies have not been finalized and flawed testing methods can cause undue alarm and result in unnecessary costs. Laboratories and analysts have not been certified to do the tests. Performance testing of analysts and analytical methodologies is not available.

According to the Forum Participants, drinking water regulations for PPCPs should be based on sound health effects research, be cost effective, and they should result in significant improvements to human health. More research, both as to health effects and to monitoring and treatment technologies is needed with regard to the effects of PPCP’s in the environment and water supply. The national standard setting process established by Congress through the SDWA and administered by the USEPA and state primacy agencies is the appropriate forum to develop monitoring and treatment requirements for PPCPs. A “holistic” approach is necessary to address the issue of PPCPs, which includes programs to stop the problem at its source, public education as to appropriate disposal procedures, as well as health effects based monitoring and treatment processes.

Participant Reaction

Generally, most of the Forum Participants commented that public information programs should be developed that can address public interest and concern about the potential presence of PPCPs in the environment and water supply, without unnecessarily alarming or undermining confidence in the quality

of their drinking water supplies. The Forum Participants discussed the need for collaboration between the industry, NARUC, NAWC, the environmental and regulatory agencies to communicate the risk in a manner that is honest and educational. Mr. Foran also outlined the broader policy issues as he sees them:

- As science continues to develop more powerful (and more expensive) detection and treatment technologies, how do we balance the “ability to detect”, with the need to monitor and treat?
- What role does the cost of monitoring and treatment for ever smaller quantities of potential contaminants play in developing these requirements?
- Who should bear these costs?
- How do we balance the costs of controlling forever smaller levels of potential contaminants against other public health and social needs?
- How do regulatory standards of “prudence” impact these issues?
- How do we keep customers informed about detection of trace levels of potential contaminants without unnecessarily undermining confidence in their drinking water supplies, in the absence of information about health or environmental impacts?
- How do we ensure a comprehensive approach that brings in all responsible parties and stake holders, e.g. FDA, pharmaceutical industry and end users of pharmaceuticals.

X. UPDATE: WATER SECTOR'S EFFORTS ON SECURITY

Forum Participant Cade Clark presented this update to the Forum.

1. Overview of Security Guidance for Very Small Systems

Under The Public Health Security and Bioterrorism Preparedness Act of 2002, all utilities that serve more than 3,300 people were required to conduct Vulnerability Assessments and prepare emergency response plans. The Bioterrorism Act also amended the SWDA to require EPA to provide “baseline information” to community water systems on how to conduct vulnerability assessments. The deadline to certify and submit the assessments was March 31, 2003, for systems serving over 100,000 people, December 31, 2003, for systems serving 50,000-99,999 people and June 30, 2004, for systems serving 3,301-49,999.

While EPA does not require very small systems to conduct vulnerability assessments, agencies have issued a number of reports help and guide small systems with their security needs. EPA's website, <http://cfpub.epa.gov/safewater/watersecurity/> also contains valuable resources and tools to help small systems with security needs.

The “Security Vulnerability Self-Assessment Guide for Very Small Systems” was developed by the Association of State Drinking Water Administrators (ASDWA) and the National Rural Water Association (NRWA) in consultation with the EPA. This document targets drinking water systems serving less than 3,300 people and is designed to help these systems assess their critical components and identify security measures that should be implemented. 16

EPA's Water Security Division produced, Drinking Water Security for Small Systems Serving 3,300 or Fewer Persons - One of the Simple Tools for Effective Performance (STEP) Guide Series. This booklet provides voluntary water security guidance for very small community drinking water systems. The goal for this guide is to help these systems understand the basics of water system security that includes Vulnerability Assessments, Emergency Response Plans, and practical actions to improve system security.¹⁷

2. Water Sector Coordinating Council

Pursuant to Homeland Security Presidential Directive 7, the Water Sector Coordinating Council (WSCC) was established to represent the water critical infrastructure sector. The responsibilities of the WSCC include, but are not limited to, the following:

- Coordinate with the Department of Homeland Security and sector specific agencies on matters of homeland security on behalf of the Water Sector.
- Coordinate the development of sector-wide input into the National Infrastructure Protection Plan (NIPP), in partnership with the sector specific agency.
- Lead outreach and awareness programs to support NIPP implementation.

- Make recommendations to reduce and eliminate significant vulnerabilities to the sector in the areas of physical, cyber and personnel.
- Review sector-wide guidelines, procedures, and effective practices in support of infrastructure protection, identifying and developing needed sector-wide training, education and implementation metrics for success in infrastructure protection activities.
- Assess requirements for research and development necessary to meet the special needs of the sector. Assure sector research and development needs are met.
- Identify and communicate obstacles or impediments to an effective infrastructure protection program and develop and recommend action to mitigate them to appropriate authorities.

The following associations/organizations appointed two utility representatives and one non-voting association/organization professional staff member to serve on the WSCC:

American Water Works Association (AWWA)
 Awwa Research Foundation (awwaRF)
 National Association of Clean Water Agencies (NACWA)
 Association of Metropolitan Water Agencies (AMWA)
 National Association of Water Companies (NAWC)
 National Rural Water Association (NRWA)
 Water Environment Federation (WEF)
 Water Environment Research Foundation (WERF)

The membership of the WSCC elects a Chair and Vice Chair from among the Council members to preside over meetings and serve as the point of contact in discussions and deliberations with the Department of Homeland Security and/or EPA. Billy Turner of Columbus Water Works is the current Chair and Don Broussard of Lafayette Utilities System is the Vice-Chair. William L. Komianos of American Water and John Ekman of United Water are NAWC's representatives on the Council.

Since the WSCC creation in 2004, the Council has engaged in briefings with federal officials and substantive work on a wide-ranging list of issues. A great deal of the work of the WSCC has gone into the following:

1. Input into the development of the NIPP, which establishes overall federal policies for protecting the nation's critical infrastructures. The NIPP covers all of the seventeen critical infrastructure and key resources. The NIPP and the National Response Plan (NRP) are complementary plans that span the spectrum of homeland security mission areas including prevention, protection, response, and recovery.
2. Input into the Water Sector Specific Plan (SSP) that is essentially the NIPP's chapter dealing specifically with the water sector, measures to protect it, and response to an attack.
3. Input into the National Asset Data Base, which identifies critical specific assets that are of particular national importance and receive special attention for federal funding.

4. The development of communications and information sharing policies, including understanding the Department of Homeland Security's Information Network (HSIN) and its relation to the water sector's Water Information Sharing and Analysis Center (WaterISAC) and Water Security Channel (WaterSC).
5. Liaison and coordination with other critical infrastructure councils, including the Government Coordinating Council and the National Infrastructure Advisory Council.
6. Understanding the Department of Homeland Security's Protection of Critical Infrastructure Information (PCII) program and its application to the water sector.
7. Input into the President's National Infrastructure Advisory Council (NIAC) "Sector-Partnership Model", which lays out a recommended partnership approach between the federal government and critical infrastructure sectors, and considers the relation between the coordinating councils and the Federal Advisory Committee Act (FACA).
8. Considering the recommendations of the National Drinking Water Advisory Council's Water Sector Working Group, concerning the elements of an active and effective security program at a water utility.
9. Briefings, discussion, and recommendations on EPA's Water Contaminant Information Tool (WCIT), include protocols and criteria for user access.
10. Input to EPA's Water System Security Research Action Plan.
11. Input into the Government Accountability Office (GAO) Report to Congress on water security.
12. Briefings, discussion, and recommendations on the effects of pandemic influenza on the water sector and federal response to such an event.
13. Briefings, discussion, and lessons learned from the federal government's Top Officials 3 (TOPOFF3) bioterrorism exercise.
14. Briefings, discussion, and comments on the EPA's Water Security Division's strategic plan.

The WSCC will continue its work, engaging with other sectors and government agencies to reduce and eliminate significant homeland security vulnerabilities to the water sector. The WSCC's vision and mission statement best summarize its work:

The Water Sector's Security Vision is a secure and resilient drinking water and wastewater infrastructure that provides clean and safe water as an integral part of daily life. This vision assures the economic vitality of and public confidence in the nation's drinking water and wastewater through a layered defense of effective preparedness and security practices in the sector.

The water sector's four overarching goals will drive development of protective programs and measures of success. These goals include:

1. Sustain protection of the public health and environment;
2. Recognize and reduce risks in the water sector;

3. Maintain a resilient infrastructure;
4. Increase communication, outreach, and public confidence.

3. Recent WSCC Work - Metrics

The CIPAC Metrics Workgroup for Water was convened by the WSCC and the Government Coordinating Council (GCC) to develop a national performance measurement system for the water sector and align the 14 Features of an Active and Effective Security Program with the Water Sector Specific Plan (SSP) Goals and Objectives. The Workgroup was composed of 18 members, including representatives of individual utilities, drinking water and wastewater associations, and Federal and State government, selected by the WSCC and GCC.

The Workgroup operated under the following assumptions. For the development of a national performance measurement system:

- Reporting of data will be voluntary;
- Data will be released to the public at the national level only in aggregate form (no utility-specific, security-sensitive data will be made available to the public without a utility's express consent);
- Progress data submitted by individual utilities will be protected from public disclosure (i.e., Freedom of Information Act or FOIA requests);
- Data will be submitted to EPA anonymously, either through a third party in aggregated form, or failing that, directly to EPA;
- Decisions about national performance measures should be consistent with the Water SSP vision, goals and objectives; and
- Workgroup efforts will be coordinated with the DHS NIPP core metrics development.

For alignment of the 14 Features with the Water SSP:

- The existing features should be optimized as much as possible;
- The features should reflect the SSP, which was not completed at the time the existing features were drafted; and
- The SSP will not be re-written as part of the alignment effort.

The Workgroup developed consensus on the following items which the WSCC and GCC approved in their February 12-13, 2008 meeting:

- 16 utility measures;
- Utility reporting system approach;
- Intent for other actor measures;
- Hazardous chemical security measures;
- Risk reduction outcome measures;
- Utility reporting baseline date and frequency;
- Utility reporting implementation approach;
- Other actor measures for states, associations, and federal agencies; and
- A reporting approach for other actor measures; and
- Updated Features of an Active and Effective Protective Program for Water and Wastewater Utilities.

4. Recent Association Security Work in Water Sector

Recently, a joint survey designed to determine the methods and protocols employed by utilities to secure the onsite hazardous chemicals used at their facilities was sent out to the water sector. Over 2,300 systems of all types, sizes, and geographic location responded to the survey. The response provides a unique look at the sector's current security posture within a statistically valid sampling containing only a 3% plus or minus margin of error at the 95% confidence level.

Approximately 100% of all utilities surveyed indicated having evaluated their disinfection methods considering water quality, public health, and security issues. Systems using chlorine, about two-thirds of all survey participants, reported maintaining higher standards of physical security than those using alternative disinfection methods. An overwhelming number of respondents, regardless of their disinfection strategies, use a combination of security methods to safeguard their utility perimeters. Methods or measures include fences, gates, warning signage, etc.

According to the survey, many utilities are electing to invest in 24/7 monitoring capabilities to ensure they can monitor their physical perimeter. Though most commonly found among mid and large-sized systems, such measures include the use of remote sensors, video surveillance equipment, routine perimeter inspections, and the hiring of guards trained to adhere to specific access control protocols.

The survey also provides insight into the widespread investments made by utilities to control access to and from their plants. Staffed entry gates, electronic access controls, manual locks, vehicle inspections, visitor restrictions, employee and visitor badges, and other methods were reported to be used by utilities of all size and type.

Water Associations in D.C. such as NAWC have used additional findings from the survey to brief officials from DHS and EPA on the sector's maturing posture relates to the number of utilities that have adopted security-related delivery protocols, such as chain of custody audits, and the use of new inspection protocols. Briefings have also highlighted a high level of emergency response planning and establishment of response protocols with local emergency response entities like fire, police, and hazmat. According to Mr. Clark, these briefings have helped to close an information gap between the water sector and its federal partners regarding the actions being taken by utilities to safeguard hazardous chemicals. The survey findings will also inform future policy decisions as well as voluntary programs sponsored by associations to enhance the sector's overall security and resiliency.

Associations have also continued to call our federal partner's attention to the significant progress made by the sector towards the design and implementation of voluntary security and emergency response programs. Such accomplishments include:

- Nearly 100% of community water systems have submitted to EPA a vulnerability assessment of their facility and certification that their emergency response plan has been updated.
- Over 10,000 drinking water and wastewater professionals have been trained in security and emergency preparedness practices by the associations listed on this letter since September 11, 2001. In addition, on-site training and assistance is available through technical service providers, to implement security plans in every small water supply. Over 20,000 communities relied on this assistance last year.

- Approximately 13,000 drinking water and wastewater utility professionals have access to security and response information distributed by the WaterISAC, which is among the most successful information sharing and analysis centers.
- The water sector has developed sector specific vulnerability assessment and emergency response tools and is in the process of evaluating interdependencies between the water sector and other critical infrastructures and key resources.
- Utilities in most states have organized (or are in the process of establishing) mutual aid and assistance networks, known as Water/Wastewater Agency Response Network (WARNs), to facilitate the rapid response and recovery of drinking water and wastewater utility operations following an incident.

Participant Reaction

In recognizing the ongoing work in this area and the opportunity to collaborate with NARUC, state commissions, and NAWC, Forum Participant Jim Sullivan offered to discuss this topic with the Department of Homeland Security and the Committee on Critical Infrastructure.

XI. TORT REFORM

In the 108th and 109th Congresses, Congressman Gary Miller (R-CA) introduced the Drinking Water Standards Preservation Act. The goal was to shield drinking water companies from frivolous lawsuits based on Safe Drinking Water Act regulations. NAWC supported the Act, made it a legislative priority and worked closely with the Congressman and his staff on drafting and strategy. The proposed Act was not reintroduced in the 110th Congress.

Participant Reaction

Forum Participant Cook noted that NAWC attempts for Federal legislation have been put on hold. However, NAWC continues to monitor the situation for opportunities.

XII. BEST PRACTICES TO PROMOTE CAPITAL INVESTMENT AND COST EFFECTIVE RATES

The discussion of “Best Practices” was led by Paul Foran. Best Practices are tools that have proven to be effective in meeting the primary challenges facing the U.S. water industry to attract capital and technological expertise in order to promote infrastructure replacement, compliance with SDWA requirements, consolidation and economies of scale, cost effective, safe and reliable service, and wise use of sustainable resources.

The NARUC Water Committee has been very active in facilitating identification and consideration of “Best Practices” in the water and wastewater industries. In providing a historical perspective, Mr. Foran pointed to the NARUC July 2005 Resolution supporting consideration of regulatory policies deemed as best practices. Some of the best practices (prospectively relevant test years, DSIC, pass through adjustments, staff assisted rate cases, consolidation, fair returns to attract capital, streamlined rate cases, integrated water resource management, affordability practices, single tariff pricing, inter-agency coordination, and data system modernization are mentioned in the NARUC resolution). The NARUC Resolution is attached to this Report. Many of the Best Practices are discussed in greater detail below.

A. TIMELY RECOVERY OF CAPITAL

The United States water and wastewater industries face capital investment requirements approaching one trillion dollars over the next 20 years. Using the USEPA Drinking Water Infrastructure Needs Survey and Assessment for 2002 and 2005, Mr. Foran suggests that the total estimated capital investment necessary to meet drinking and clean water requirements through 2019 could range from \$485 billion to \$896 billion. Consequently, the prime challenge continues to be the ability to attract the necessary capital to meet the investment required. For regulated investor-owned systems, timely recovery of invested capital is critical to the ability to attract new capital. Moreover, in order to minimize rate impacts on customers, the industry must be able to recover invested capital at the most cost-effective rates, thereby facilitating timely construction and capital investment in the most efficient manner possible.

1. Use of Prospectively Relevant Test Years

In a rising cost industry with heavy capital investment requirements, the use of historic test years assures there will be no recovery of capital that is invested during the test year and thereafter, until the utility files another rate case. This discourages necessary investment during these periods and skews construction and investment timing based on artificial test year issues rather than system needs and efficient construction planning processes. Mr. Foran noted that failure to match test years to effective period of rates discourages cost effective investment. Moreover, Mr. Foran stated that as a result of regulatory lag, the reliance on historical test years can virtually assure that the utility does not earn its allowed rate of return, thereby increasing risk and the cost of capital.

According to the industry Forum Participants, from both a regulatory and public policy perspective, the touchstone for test years should be “whether they produce rates that are prospectively relevant, that is, that the rates most accurately reflect the costs during the period the rates are most likely to be effective.” The Forum Participants also noted that this may or may not involve use of future test years. A

“best practice” in this area would provide the utility with the obligation to identify the most prospectively relevant test year and the choice to use that test year in a rate proceeding. The utility would have the choice of utilizing a historic, current, or future test year and would have the burden of demonstrating the propriety of that choice in the rate proceeding. A company that chooses to use a future test year would have additional filing and proof requirements to assure that all projections are reasonable. Mr. Foran also noted that any party should be able to challenge the utility’s choice of test year. This process has been followed successfully for many years in Illinois. According to Mr. Foran, future test years are used in Illinois, Kentucky, Tennessee, and New York.

2. Distribution System Investment Charge (DSIC) for Water and Wastewater Systems

DSIC was first implemented in Pennsylvania in approximately 1996. This specific recovery mechanism allows for rate increases, outside of a general rate proceeding, for non-revenue producing investments specifically used to replace aging infrastructure. Such programs have now been implemented in at least six other states (Illinois, Missouri, Ohio, Delaware, Indiana, Connecticut and New York). In Pennsylvania, the program has operated for 10 years with no customer complaints. Mr. Foran noted that the DSIC allows for more efficient and timely investment of capital which encourages cost-effective replacement of aging infrastructure and enhances service. According to Mr. Foran, use of system improvement charges may also allow avoidance of rate shock and costly rate proceedings.

3. Surcharges for Significant Capital Investments Required to Comply with Certain Safe Drinking Water Act (SDWA) Monitoring or Treatment Requirements

As indicated earlier in the report, the water industry must comply with the SDWA, which currently requires utilities to monitor and/or treat 98 potential contaminants, including a new maximum contaminant level (MCL) established by the USEPA for arsenic. That particular MCL for arsenic is an example of what will involve significant removal costs in some states, such as Arizona. In response to this challenge, the Arizona Commission has authorized one utility (Arizona Water Company) to implement an Arsenic Cost Recovery Mechanism (ACRM). The ACRM would essentially allow the utility to recover gross return, depreciation, and recoverable operation and maintenance (O&M) expense, upon commercial operation of arsenic removal facilities. This recovery mechanism is implemented through a surcharge-like increase and is approved outside of a general rate proceeding. This program facilitates prompt compliance with SDWA mandatory requirements, improves water quality for customers, and mitigates rate shock. The Arizona program has received the support of the Consumer Advocate in Arizona. Similar to a DSIC concept, the “Best Practice,” as exemplified by the arsenic issue in Arizona, would be to allow selected recovery of big-ticket items that result from government mandates in order to achieve the above-described SDWA goals.¹⁸

4. Use of Construction Work in Progress (CWIP) vs. Allowance for Funds Used During Construction (AFUDC)

New major treatment facilities or development of long-term sources of supply may take a number of years before they become operational. Typically, these costs have been accounted for in one of two ways: the use of CWIP in rate base or AFUDC. In a rising cost, capital-intensive industry, the use of CWIP is a “Best Practice.” It allows certain construction costs for plants that are not yet in service to be included in rate base, thereby providing the utility with current revenues associated with such

construction which allows it to more efficiently finance construction costs and maintain financial viability. On the other hand, AFDUC does not provide any current cash flow to the utility to fund a major project. Moreover, when you consider that the accumulation of carrying charges on invested capital will ultimately be rate based when the project becomes used and useful, the use of AFUDC can ultimately and substantially increase the cost to customers resulting in rate shock. CWIP mitigates these negative impacts.

B. PROMOTION OF CONSOLIDATION, ECONOMIES OF SCALE AND EFFICIENCY

With 53,000 community water systems and 16,000 wastewater systems, the United States water and wastewater industry is plagued by extreme fragmentation. As a result, the industry, as a whole, has not developed the economies of scale and efficiencies that other regulated utilities have. Furthermore, most states are plagued with a host of small technically and financially non-viable systems that will not be able to meet the infrastructure and quality challenges of the future. Some Forum Participants note that “Best Practices” in this area should include policies that stop the creation of new, small, non-viable systems, and facilitate consolidation, economies of scale, and the ability to meet infrastructure requirements in the most efficient and cost-effective manner. Forum Participants agreed that the issue for policy makers should be whether the new system owners are committed to making necessary improvements and a long-term commitment. These policies should also protect legitimate ratepayer interests. In that regard, policy makers should consider the following:

1. Policies that Permit Recovery of and Investments in Business Combinations that Produce Clear and Identifiable Benefits to Customers

a. Acquisition Adjustments

Mr. Foran supports acquisition adjustments as a best practice. Because the water industry remains fragmented, Mr. Foran believes that acquisitions should be encouraged and acquisition adjustments should be allowed where identifiable benefits to customers result from the acquisition. Pennsylvania explicitly allows acquisition adjustments for small and/or troubled systems, subject to certain conditions, and other states will allow such adjustments for these types of systems. As discussed later in the Forum Report, the Pennsylvania Legislature also recognized acquisition adjustment policies for troubled systems as a best practice. If customer benefits occur from the acquisition, acquisition adjustments should be considered whether or not the acquired system is “troubled” or small. Texas and California are examples of states where this can occur. Mr. Foran suggests that the basic “best practices” principle could be stated as follows:

If and to the extent a business combination produces identifiable savings, service improvements or other benefits to customers, shareholders should have the opportunity to recover and earn a return on the investment required to produce those benefits.

In this concept, the difference between depreciated original cost and a fair market purchase price represents the investment necessary to produce benefits. Methods to achieve this goal could include acquisition adjustments to rate base or the ability of the utility to retain quantified savings resulting from the combination equivalent to a return of and on the investment necessary to produce the savings.

b. Single Tariff Pricing

Single Tariff Pricing has been recognized as the norm for electric, natural gas and telephone utilities. These utilities often serve large territories wherein costs of service can be substantially different from region to region within the service territory. For example, costs of service for urban customers will be different from rural customers and differing geographic terrains impose different costs. Yet all customers in a particular class enjoy the same rates. This has allowed these industries to spread the benefits of economies of scale to all of their customers. Although Single Tariff Pricing has been controversial for water utilities, many of the Forum Participants stated that it should nonetheless be recognized as a “Best Practice,” especially in view of the challenges facing the industry in the future.

2. Rate Case Process

The following are examples of practices that could reduce the cost of rate cases, and enhance the clarity and control of the scope of the proceedings.

a. Mediation and Settlement Procedures

Best Practices in this area would include establishment of procedures and encouragement of the use of such procedures for mediation and settlement in order to both settle cases as a whole and to narrow issues that need to be litigated and resolved.

b. More Extensive Use of Civil Court–like Rules of Procedure

Civil Court rules narrow the scope of contested issues and eliminate unnecessary litigation. Examples of such procedures include requests to admit; mandatory stipulations as to questions of law and/or fact; requirements that parties stipulate what witnesses they intend to cross, how long their cross will take, reasonable limitations on cross; and more extensive use of prehearing conferences to narrow issues.

c. Specific and Enforceable Time Limits on the Length of Rate Cases

The Forum Participants discussed the need for time limits in rate case proceedings. Without such time limits, the lag between a utility’s investment of capital and the recovery of that investment can be significantly increased. According to the Forum Participants, specific and enforceable time limits would help impose a desirable discipline in presenting and litigating proceedings at the state commissions. It would improve the opportunity of the utility to actually earn its allowed return, decrease the costs of rate proceedings, and facilitate capital recovery and investment.

d. Use of Step Rates/Phase-ins

Similar to the 3-year rate cycle concept in California, the use of “step rates” could reduce the number of rate case filings and the administrative burden on commissions and their staffs, as well as substantially reduce the cost of rate proceedings.

e. Expedited Rate Case Procedures for Small Companies

The expense and time requirements for normal rate case processes are issues for all utilities, but can be especially onerous for small companies that lack substantial technical and operating resources and where the cost of the rate case could even exceed the expected incremental revenues. This can result in disincentives for these systems to file for necessary rate relief, thus exacerbating their viability challenges. It can also result in disproportionate costs imposed on customers. Expedited procedures for such companies can help mitigate these impacts and facilitate more financially stable companies.

C. CONSERVATION/WISE USE

The Forum Participants recognized that efforts to reduce unaccounted for water and efforts to promote conservation and wise use of the resource generally are a “best practice” in efficient investment and ratemaking. Metering water usage is key to effective water conservation. Moreover, effective conservation requires aggressive and collaborative communication efforts by industry, policymakers, and consumer groups, via educational websites, bill inserts, media, home education, and proactive conservation events.

1. Integrated Water Resource Management

Integrated water resource management can take many forms but essentially involves management of the 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. Many factors outside of the traditional regulated framework or state commission jurisdiction can directly impact the cost and reliability of service to regulated customers. These include, for example, watershed protection, wastewater management, reuse, groundwater infiltration and recharge. The more effectively all these impacts can be managed, the more efficient and cost-effective provision of regulated water service is likely to become. According to the Forum Participants, best practices should include using integrated water resource planning concepts in source of supply and treatment decisions. Mr. Foran noted that providing safe, reliable, and cost effective service increasingly means a more holistic approach to water resource management. The better all the elements are managed, the better the impact on safety, reliability, and cost.

2. Decoupling

As source of supply constraints increase, drought conditions affect certain areas of the country with greater frequency, and the cost of treating water continues to rise. Utilities have an increasing responsibility to encourage the wise use of this precious resource by their customers and, where appropriate, to implement programs that could have the effect of reducing per capita consumption. Indeed, the use of more efficient plumbing fixtures and appliances, such as low flow toilets, among other factors, has already resulted in a significant drop in per capita consumption over time. The increasing need to use this resource ever more efficiently will likely continue and magnify this trend. Therefore, acting as responsible stewards of scarce water resources will increase financial pressure on water service providers as fixed costs must still be recovered despite decreasing per capita sales volumes.

One potential solution to this challenge is the concept of “decoupling” rates from sales volumes that can help address both the need to use water more efficiently while keeping the utility financially sound.

The electric industry has experienced similar issues with regard to demand side management programs designed to better control the need for new generating capacity or the use of high priced fuels.

Participant Reaction

Many of the Forum Participants expressed a concern regarding the Country's aging water and wastewater infrastructure. It was acknowledged that many of the best practices described above could be successfully used to address the aging infrastructure problem. Generally speaking, throughout the entire Forum, an underlying theme and comment from the Participants included the importance of effective communication and collaboration between state commissions, consumer groups, and the industry. In that regard, in addition to the "Best Practices" outlined and discussed above, the Forum Participants identified the following:

- Proactive Partnerships and Communication. In particular, for EPA and infrastructure issues, the Forum Participants recognized that a proactive education effort on costs, benefits, and risk are a best practice.
- Staff-focused educational conferences.
- Affordability Policies. The Forum Participants identified monthly billing, payment plans, and conservation education as best practices in the area of affordability.
- To the degree allowed in each state, pre-filing meetings with state commissions are a best practice.

XIII. CONSERVATION, DECOUPLING, AND THE AVAILABILITY OF SUPPLY

Forum Participant Richard Roth gave a broad overview on conservation measures with particular focus on California as a best practice.

A. CONSERVATION MEASURES AND THE REMOVAL OF CONSERVATION DISINCENTIVES: A CALIFORNIA EXPERIENCE

1. Background

California's concern about water supply availability and the ability of an aging infrastructure to provide an ever growing demand for water with adequate supplies prompted, in December 2005, the California Public Utilities Commission (Commission) to adopt the Water Action Plan (WAP), establishing four key areas of policy focus. The four key areas are: 1) provision of safe and high quality water; 2) the availability of highly reliable water supplies; 3) the efficient use of water; and 4) reasonable rates and viable utilities. In response to a generally constrained water supply situation, following the issuance of the WAP, most of the Commission-regulated water utilities in California have been ordered to implement various aspects of the WAP, with particular emphasis on water conservation measures and rate mechanisms that will help promote the expansion of water conservation programs.

Although water conservation has always been a primary resource management tool for California, the water conservation issue was moved to the forefront in 2007 when a Federal judge ruled that the water supplies delivered from the Sacramento-San Joaquin Delta to both Northern and Southern California through the California Aqueduct, had to be reduced due to environmental concerns related to the impact on the declining population of the California smelt.

2. Existing Water Conservation Measures

Long before reductions in the California smelt population made headlines, Commission-regulated water utilities had already embarked on many effective conservation measures. The true and tried measures, such as the distribution of low-flow shower heads and faucet aerators, water audit programs and leak detection programs, have been standard in the industry for more than a decade. The primary goals of these programs are to identify the source of the customer's water consumption and recommend ways in which water can be used more efficiently. For example, a standard water audit is comprised of a water conservation inspector completing a thorough investigation of the customer's home or business and often the water-saving showerheads and faucet aerators are installed at that time. The conservation inspector will thoroughly check the property for leaks and will measure the flow rates of all showers, faucets and toilets. During an audit the customer is also introduced to any available toilet replacement or efficient washer rebate program. Outdoors, the inspector will check the landscaping and irrigation system to determine if additional water savings can be achieved, and the customer is provided information about appropriate watering schedules and efficient water delivery, resulting in the generation of irrigation schedules specific to each customer's watering needs. The inspector concludes the audit by providing the customer with conservation literature and additional tips on how water can be used more efficiently. These programs have been extremely popular with California customers and have provided immediate water usage reduction benefits to both consumers and utility.

For the last decade the Commission-regulated water utilities also have participated in the residential Ultra Low Flow Toilet (ULFT) replacement program. The original intent of this program was to encourage customers to replace their old toilets with new Ultra-Low Flush models that use only 1.6 gallons per flush, whereas toilet units manufactured prior to 1980 typically use about five gallons per flush. Due to the success of the program and implementation rate, many of the residential programs have ended and focus has shifted the marketing effort to multi-family and single family properties that have not yet retrofitted their non-ULFT toilets to a High Efficiency Toilet, that use even less water than conventional ULFTs. The water utilities have also participated in the residential clothes washer rebate program, in which rebates are offered to customers if they purchase clothes washers with higher efficiency ratings. Customers are made aware of these programs through both water audit programs and retail outlets.

Public information programs through regular distribution of written water conservation tips and conservation information via bill inserts, fliers and booklets, as well as seasonal reminders encouraging irrigation reductions during the fall and winter are standard for most of the water utilities. The goal of the public information programs is to increase customer awareness of habits or procedures that waste water, as well as awareness of water capacity, available sources, system capacity, and treatment and distribution issues. The public information campaigns are designed to promote understanding and create a dialogue in the community on water conservation topics as well as to motivate customers to conserve. San Jose Water Company's comprehensive Water Conservation Booklet is an example. It is designed to help customers gain a better understanding on how to use water more efficiently. The booklet contains information on water audit programs, indoor water savings devices like low flow showerheads and faucet aerators, how to read a water meter and check for leaks, indoor and outdoor conservation guidelines and information on how to repair toilet and faucet leaks. This booklet is provided to all new customers in their welcome packet during a water audit appointment or upon request.

Some commission-regulated water utilities have taken water conservation measures to another level. For example, Valencia Water Company now offers free evapotranspiration (ET) controllers that automatically adjust irrigation schedules based on landscape needs and local weather conditions for residential customers that have an irrigated space over 2,500 square feet and allow Valencia Water Company to conduct a residential water audit.

Moreover, the California water industry has also recognized that in order to create a culture of conservation it is necessary to educate young people about the importance of efficient water use. Therefore, the investor owned water companies have also given greater emphasis to school education programs promoting water conservation. For example, Suburban Water Systems, California Water Service Company and San Jose Water Company engage school age children during school visits, while providing age specific educational materials and children's activity books on water conservation issues provided to the schools without charge. Valencia Water Company has also partnered with Southern California Edison to provide kits and a lesson plan so schools can teach the value of water and energy conservation. These kits specifically allow the children to do their own home water and energy audits. As a special treat a music group from the California Water Service Company will appear at school events to promote conservation activities set to a happy tune. The artistic conservation theme was also extended at the 2006 NARUC Summer Meetings in San Francisco, when the California Water Association sponsored a very well attended play containing a strong conservation message.

In 2002, the San Jose Water Company initiated the sponsorship of a “Water Awareness Day.” Through a bill insert and bill messages, water customers are invited to attend the event which is part of a minor league baseball game. At the game San Jose Water Company personnel set up various water conservation displays, including games for the children and conservation information for the adults. According to Mr. Roth, this is a best practice and the success of the event can be measured in that the Water Awareness Day crowds have been the largest to attend the minor league games in more than 20 years.

Finally, in addition to these programs, the water companies engage in other activities that contribute to the overall goal of reducing water waste, but are not specifically designated as conservation or water management programs. These include measures such as meter calibration and replacement, corrosion control, valve exercising, and metering of all service connections. Finally, both San Gabriel Valley Water Company and San Jose Water Company participate as retailers in successful recycled water programs that encompass several high volume customers such as golf courses and cemeteries.

3. The Regulatory Disincentive to Conservation

Mr. Roth noted that although these combined water conservation efforts have been in place for more than a decade, they have been partially muted due to the relationship between water sales and utility earnings. For example, the traditional rate setting methodology with forward looking test years adopts projected sales to set rates. Consequently if the actual sales exceed the projected sales, the utility will (all else being equal) increase earnings. Conversely, should actual sales fall below projected sales revenues will be reduced and may not allow the utility to recover its fixed costs (earnings). Therefore, the reality is that California Commission-regulated water companies have never really had a strong incentive to harden and/or expand their conservation efforts, since any revenue recovery for “lost” sales resulting from effective water conservation measured has never been allowed by the Commission in between rate cases. Effectively, the traditional regulatory mechanisms created a strong disincentive for water conservation, and in fact created a perverse incentive for the utility to promote water sales.

4. Elimination of Conservation Disincentives - Decoupling of Sales from Revenue

With the adoption of the WAP, the California Commission recognized that the existing regulatory mechanisms available for water utilities did not effectively support the conservation efforts promoted by state water policy. Therefore, among other water conservation measures and programs encouraged by the Commission in the WAP, the Commission wanted to consider decoupling water sales from utility earnings (Water Revenue Adjustment Mechanism or WRAM) in order to eliminate the strong financial disincentive to conservation and to allow for the expansion of water conservation efforts and programs.

The decoupling of utility sales from revenue has, in one form or another, been in place for energy utilities in California since the early 1980s. The Commission adopted various forms of Energy Revenue Adjustment Mechanisms (ERAM) for all energy utilities that made them indifferent to declines (variations) in sales. These mechanisms were adopted by the Commission in response to energy supply deficiencies and to promote a more efficient use of energy. Thus, on the energy side it was recognized at an early stage that conservation and efficient use of resources, could not only alleviate supply shortages but also result in significant avoided infrastructure costs and ultimately result in environmental benefits. The implementation of decoupling for energy utilities has been successful in

that the California per capita use of energy has declined from one of the highest in the nation to one of the lowest. The mechanism has also encouraged the development of very aggressive energy efficiency programs and conservation incentive programs applicable to both utility customers and the utilities.

In its basic form the decoupling mechanism functions as a balancing account that measures the difference between actual revenues collected and authorized revenues on a monthly or yearly basis. Thus, in a given time period in which sales are below the authorized sales level resulting in actual revenues collected that are below the authorized revenues, the revenue deficiency will be tracked for future recovery from the customers. Similarly, in a time period in which sales exceed authorized sales and therefore actual revenue exceeds authorized revenue, that difference will be tracked and ultimately refunded to the customers. Thus, implementation of such a mechanism has left the utility indifferent to and insulated from the level of sales.

Participant Reaction

The Forum Participants recognized the California WAP as a best practice generally. Additionally, several California water utilities (California-American Water Company, California Water Service Company, Golden State Water Company, Park Water Company, San Jose Water Company and Suburban Water Service) are now in the process of instituting pilot programs that implement various variations of the WRAM principle. Although the WRAM is just one component of successful future conservation efforts in the water industry, this innovative program will serve to at least establish the foundation for ever more aggressive conservation efforts in the California water industry. Forum Participant and Consumer Advocate Sobolewski noted that in some states decoupling has been allowed in recognition of industry's active participation in conservation. In that regard, the Forum Participants also recognized that the debate recently over this issue has been "whether decoupling is used to promote conservation or to increase sales." Forum Participant O'Connell-Diaz noted that Illinois recently approved a 4-year decoupling pilot project in the gas industry and Forum Participant Hardy indicated that Indiana has used decoupling as a result of a settlement of a case between Public Counsel and a gas company.

XIV. WATER REUSE

John Shearer spoke to the Forum on behalf of the Water Reuse Association. The Water Reuse Association is a national association created in the year 2000. The membership now totals more than 365 entities with major utilities in California, Arizona, Texas, and Nevada. There is a growing membership in Florida, Virginia, Colorado, and the Pacific Northwest, with overall growth in membership of 10% per year.

Mr. Shearer identified the factors that drive water reuse and desalination. Those factors are: population growth; increased municipal, industrial, and agricultural demand; dependence on single source of supply; TMDLs/nutrient loads caps; and drought.

With 90% of the water reuse occurring in four states, there are significant trends in water reuse¹⁹. Reuse is growing in prominence around the globe. See for example, Australia, Singapore, South Africa, and Spain. Technology marches forward and research focus is now global. Progress has been made on indirect potable reuse front. The GHG, energy/water, carbon footprint, climate change are growing concerns and there is the constant challenge in public acceptance arena in regard to reuse.

Florida is one state where the reuse numbers are growing with 590 MOD currently and a goal of IGBD by 2010. In fact, Mr. Shearer noted the 2008 Florida Legislature proposed a bill creating a Reclaimed Water Coordination Task Force charged with reporting to the legislature by January 31, 2009 on the status of reuse in Florida.

1. Applications of Reuse

Mr. Shearer identified many of the various applications of reuse. Applications includes:

- Landscape irrigation;
- Agricultural irrigation (edible and nonedible crops);
- Industrial and commercial;
- Environmental uses;
- Non-potable urban uses;
- Groundwater recharge; and
- Potable water supply augmentation.

2. Benefits of Reuse

According to Mr. Shearer, reuse is a dependable source of supply. It is locally controlled and environmentally friendly. With low or no capital costs, reuse augments existing supplies.

However, Mr. Shearer also noted that public acceptance of water reuse continues to be a work in progress. Nonpotable use is strongly supported favoring minimal contact. Mr. Shearer believes that more acceptance will come with more knowledge.

3. Current Reuse Projects

Mr. Shearer informed the Forum about the Seven “Hottest” Indirect Potable Projects Currently Pending. They are:

1. Orange County, CA – GW recharge system at a \$487.6 million cost
2. San Diego’s 2nd attempt at indirect potable reuse – “repurification”
3. Miami-Dade’s proposed \$1.1 billion indirect potable reuse facility
4. Logan Township MUA – indirect potable reuse facility
5. Singapore PUB’s “NEWater” facility
6. Brisbane’s indirect potable reuse facility
7. MRWPCA’s proposed IPR facility

4. Emerging Issues and Challenges with Reuse

There is an emerging issue and challenge associated with the public perception over reuse and its acceptance. Consequently, to address this, the industry has struggled with the corresponding terminology. Therefore, positive “branding” is critical.

Participant Reaction

The Forum Participants and Mr. Shearer discussed the need to communicate risk to the public and to the media in a fashion designed to educate on the “value of water” as well as on the new cost-effective technologies used in reuse. Education and outreach as well as stakeholder involvement is key to acceptance. Forum Participant Roth questioned whether it was time to have a uniform regulatory framework for reuse.

XV. STATE DRINKING WATER PROGRAMS – A STATE ADMINISTRATORS’ PERSPECTIVE

State drinking water program administrators have many points of intersection, agreement, and mutual cooperation with NAWC, NARUC, and the respective members. While the programs may be housed in different state agencies, most states have state drinking water programs.²⁰ June Swallow of the Rhode Island Health Department represented the state drinking water administrators and presented this section to the Forum.

Ms. Swallow noted that States often require more than the minimums outlined in the SDWA and provide more assistance in source and design approvals. The State Administrators also provide a greater degree of assistance to small water systems. The State Administrators focus on providing guidance and training for small systems so that the systems avoid violations and maintain adequate capacity. The initiatives and focus of state administrators are outlined below.

A. PUBLIC HEALTH PROTECTION REMAINS THE PRIMARY FOCUS

1. **Support Water Systems** State Administrators believe that their fundamental job is to help public water systems, especially the small systems, understand their responsibilities and support them in carrying out those responsibilities so they can succeed at delivering safe water. Therefore, according to Ms. Swallow, the relationships with organizations like NAWC are critical to success.
2. **State Administrators Go Beyond the Minimums** The legislative intent of SDWA is to protect the health of people served by public water systems. However, SDWA does not require everything necessary to ensure safe water. Many states go beyond the SDWA minimums to protect their citizens. For instance, some states regulate system sizes smaller than 25 persons per day and many regulate private wells. Several states also have their own standards for contaminants that the Agency does not regulate.

B. IMPLEMENTING RECENTLY PROMULGATED DRINKING WATER RULES

1. **LT 2/Stage 2** Some states have been heavily involved in pre-primacy activities; others are preparing for post-primacy requirements. A number of states are unable to take on pre-primacy requirements due to their daunting workloads (e.g., Region V & X states). Overall, state administrators believe implementation has gone reasonably well.
2. **Ground Water Rule** State Administrators are now preparing primacy applications. In many states, the rule is likely to have relatively minimal impact since those states require disinfection of all systems. However, in other states, the rule is expected to have a major impact.
3. **Lead and Copper Rule Short Term Revisions** State Administrators will shortly begin working with utilities to implement the various rule “fixes.” States are in general agreement with this suite of regulatory changes and believe these provisions bring some needed clarity to some of the provisions of the rule.
4. **Challenges** The recently released rules have been largely risk-based rather than “one size fits all.” While that is positive in many respects, it can be time and resource intensive for states in terms of implementation. States also grapple with simultaneous compliance issues.

C. STATE PERSPECTIVES ON RULE DEVELOPMENT AND REGULATORY TOOLS

1. Regulatory Determinations from CCL2 State Administrators filed comments with the EPA in regard to CCL2. According to Ms. Swallow, State Administrators believe that the “heavy hitter” in this group of contaminants is perchlorate. The State Administrators are not necessarily advocating that EPA regulate perchlorate, but they do urge EPA to make a decision as soon as possible. State Administrators support the CCL process for regulatory decisions relating to PPCPs.

2. 6-Year Review of Rules States have supported the 6-year review process by voluntarily providing occurrence data and recommending implementation changes. EPA will likely propose a handful of the most pressing implementation changes along with whatever decisions they make in terms of whether or not the regulatory limits should change.

3. Total Coliform-Distribution System Rule States are actively participating in the Federal Advisory Committee and the supporting Technical Workgroup. An ASDWA Steering Committee provides input to the state representatives (from Utah and Minnesota). State Administrators favor the idea of doing away with a chronic MCL violation for Total Coliform and agree that it makes sense to have total coliform positive findings trigger action. Failure to take actions, in turn, would be a violation.

D. WATER SYSTEM CAPACITY DEVELOPMENT/SMALL SYSTEM FOCUS

1. At the National Program Level States and ASDWA have been active in providing input on an array of guidances and training documents designed to assist small systems.

2. States Work to Ensure Adequate Capacity States work to build small system T, M, & F capacity. ASDWA includes a small system focus in its implementation training as well as direct technical assistance and work through partners to assist small systems.

E. DRINKING WATER SECURITY

State Administrators continue to imbed security into their every day programs. The long-term success of drinking water security will be to transform it from a “boutique” program add-on to part of the day-to-day work. Most recently, a State Security Coordinators Workshop was held in January in New Orleans, Louisiana.

State Administrators believe in the importance of an “all-hazards” approach that emphasizes resiliency and recovery, in addition to prevention and detection. State drinking water programs will continue to play a vital communication link between the Federal Government, other state agencies, and local entities. State Administrators actively participate in the Government Sector Coordinating Council as well as in joint GCC and Water Sector Coordinating Council meetings. They were active in helping formulate the Sector Specific Plan as well as the recently issued security metrics (developed by the CIPAC Metrics workgroup).

F. SOURCE WATER ASSESSMENT AND PROTECTION

ASDWA and state drinking water programs continue to work with partners at all levels to develop collaborative strategies to leverage scarce resources and move from assessment to protection. For

most states, source water protection is a voluntary program that is in addition to everything else they do. State drinking water programs typically do not have all of the authorities they need (especially, those state drinking water programs housed within health departments, such as Rhode Island). Thus, leveraging and collaboration are critical. Some examples of State Administrator activities include:

1. Participation in the Source Water Collaborative (which NAWC is now part of);
2. Holding a joint ASDWA/GWPC Workshop (October 2008 in Colorado Springs); and
3. Sharing of effective approaches, tools, and guidance.

States continue to do their best, in the face of resource constraints, to report on progress of source water protection program through EPA's National Water Program Guidance (the yearly increments under EPA's Five Year Strategic Plan). ASDWA will shortly be developing a "white paper" on what states are currently doing in this area. This document will also direct states to additional resources and information to support their water conservation/water efficiency efforts.

G. DRINKING WATER DATA MANAGEMENT

State Administrators have largely completed the process of transitioning to the modernized data flow. This has been a major effort for states. State Administrators have also been active in helping ensure accurate and reliable data with better measures of "data quality." For example, states have worked with EPA to develop a Data Reliability Improvement Plan. The goal of State Administrators is to ensure high quality drinking water data for all program areas that use it. In May 2008, the State Administrator will discuss this further at a state-EPA Data Management Users Conference in Nashville, Tennessee.

H. LOOKING AHEAD: A RESOURCE-CONSTRAINED ENVIRONMENT

Federal and state budgets are expected to continue to be extremely tight. At best, the outlook for the future is stable funding. State Administrators can collaborate with NAWC to secure greater funding levels for programs.

The degree to which resources are limited varies widely from state to state, so the choices necessarily vary accordingly. But State Administrators are finding that states across the country are using the following "coping" strategies:

1. Taking greater percentages of SRF Set-Asides;
2. Increasing fees or instituting new fee systems; and
3. Seeking more state general funds.

Until and unless the PWSS program is funded at levels commensurate with the magnitude of the job, hard choices will be made at the state level. States will continue to set public health tasks as our highest priorities.

Participant Reaction

According to Ms. Swallow, NAWC and NARUC could collaborate with the State Administrators to address areas of mutual concern. For example, Ms. Swallow and the Forum Participants recognized opportunities for potential collaboration on the topics of financial viability and the anticipated shortage of certified operators.

XVI. FUTURE ISSUES

As indicated in the Forum Report, the issue and press related to pharmaceutical traces in drinking water is relatively new and USEPA's request for comments are pending with no resolution perhaps until next year. Therefore, the Forum Participants have expressed a desire to have a briefing on this issue by USEPA and the industry at next year's Forum.

As it relates to infrastructure needs generally, the Forum Participants also suggested that a briefing by USEPA on its anticipated 2009 needs survey would be timely. Somewhat related to that, Forum Participant King expressed an interest in understanding how "fire protection" impacts infrastructure estimates.

As a reaction to Ms. Swallow's presentation, Forum Participant Dian Taylor requested a discussion or analysis on the interest and feasibility of IOUs serving private well customers from a public health, pro-health perspective. Another forum participant requested additional information for next year's forum on how climate change will impact the water industry.

Forum Participant Winslow requested a presentation specifically on the Alabama example of ratemaking and Forum Participant Sullivan's comments about "rate stabilization" and how that has been a best practice in Alabama. Finally, Forum Participants requested a briefing on the California WAP especially in regard to decoupling.

Resolution Supporting Consideration of Regulatory Policies Deemed as “Best Practices”

WHEREAS, A number of innovative regulatory policies and mechanisms have been implemented by public utility commissions throughout the United States which have contributed to the ability of the water industry to effectively meet water quality and infrastructure challenges; and

WHEREAS, The capacity of such policies and mechanism to facilitate resolution of these challenges in appropriate circumstances supports identification of such policies and mechanisms as “best practices”; and

WHEREAS, During a recent educational dialogue, the “2005 NAWC Water Policy Forum,” held among representatives from the water industry, State economic regulators, and State and federal drinking water program administrators, participants discussed (consensus was not sought nor determined) and identified over 30 innovative policies and mechanisms that have been summarized in a report of the Forum to be available on the website of the Committee on Water at www.naruc.org; and

WHEREAS, As public utility commissions continue to grapple with finding solutions to meet the myriad water and wastewater industry challenges, the Committee on Water hereby acknowledges the Forum’s Summary Report as a starting point in a commission’s review of available and proven regulatory mechanisms whenever additional regulatory policies and mechanisms are being considered; and

WHEREAS, To meet the challenges of the water and wastewater industry which may face a combined capital investment requirement nearing one trillion dollars over a 20-year period, the following policies and mechanisms were identified to help ensure sustainable practices in promoting needed capital investment and cost-effective rates: a) the use of prospectively relevant test years; b) the distribution system improvement charge; c) construction work in progress; d) pass-through adjustments; e) staff-assisted rate cases; f) consolidation to achieve economies of scale; g) acquisition adjustment policies to promote consolidation and elimination of non-viable systems; h) a streamlined rate case process; i) mediation and settlement procedures; j) defined timeframes for rate cases; k) integrated water resource management; l) a fair return on capital investment; and m) improved communications with ratepayers and stakeholders; and

WHEREAS, Due to the massive capital investment required to meet current and future water quality and infrastructure requirements, adequately adjusting allowed equity returns to recognize industry risk in order to provide a fair return on invested capital was recognized as crucial; and

WHEREAS, In light of the possibility that rate increases necessary to remediate aging infrastructure to comply with increasing water quality standards could adversely affect the affordability of water service to some customers, the following were identified as best practices to address these concerns: a) rate case phase-ins; b) innovative payment arrangements; c) allowing the consolidation of rates (“Single Tariff Pricing”) of a multi-divisional water utility to spread capital costs over a larger base of customers; and d) targeted customer assistance programs; and

WHEREAS, Small water company viability issues continue to be a challenge for regulators, drinking water program administrators and the water industry; best practices identified by Forum participants include: a) stakeholder collaboration; b) a memoranda of understanding among relevant State agencies

and health departments; c) condemnation and receivership authority; and d) capacity development planning; and

WHEREAS, The U.S. Environmental Protection Agency's "Four-Pillar Approach" was discussed as yet another best practice essential for water and wastewater systems to sustain a robust and sustainable infrastructure to comprehensively ensure safe drinking water and clean wastewater, including: a) better management at the local or facility level; b) full-cost pricing; c) water efficiency or water conservation; and d) adopting the watershed approach, all of which economic regulators can help promote; and

WHEREAS, State drinking water program administrators emphasized the following mechanisms which Forum participants identified as best practices: a) active and effective security programs; b) inter-agency coordination to assist with new water quality regulation development and implementation, such as a memorandum of understanding; c) expanded technical assistance for small water systems; d) data system modernization to improve data reliability; e) effective administration and oversight of the Drinking Water State Revolving Fund to maximize infrastructure remediation, along with permitting investor owned water companies access in all States; f) the move from source water assessment to actual protection; and g) providing State drinking water programs with adequate resources to carry out their mandates; now therefore be it

RESOLVED, That the National Association of Regulatory Utility Commissioners (NARUC), convened in its July 2005 Summer Meetings in Austin, Texas, conceptually supports review and consideration of the innovative regulatory policies and practices identified herein as "best practices;" and be it further

RESOLVED, That NARUC recommends that economic regulators consider and adopt as many as appropriate of the regulatory mechanisms identified herein as best practices; and be it further

RESOLVED, That the Committee on Water stands ready to assist economic regulators with implementation of any of the best practices set forth within this Resolution.

Sponsored by the Committee on Water

Adopted by the NARUC Board of Directors July 27, 2005

1 Classifying Drinking Water Contaminants for Regulatory Consideration. <http://www.educ/catalog/10080.html>

2 “A Fresh Look at U.S. Utility Regulation”, S&P Utilities and Perspectives, February 2, 2004

3 Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia, 262 U.S.679 (1923).

4 Federal Power Commission v. Hope Natural Gas Company, 320 U.S. 591 (1944).

5 http://epw.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_ID=30641a14-802a-23ad-4b51-a10dd439793f

6 USEPA Website, April 15, 2008

7 Testimony of Benjamin Grumbles, Senate Subcommittee Hearing, April 15, 2008

8 AWWA Website 4/15/2008

9 Testimony of Dr. Shane Snyder before Senate Subcommittee April 15, 2008

10 Testimony of Dr. Shane Snyder before Senate Subcommittee April 15, 2008 (Study referred to is being conducted by the American Water Works Association Research Foundation)

11 Dr. Jennifer Sass’ summary of her testimony before the Senate Subcommittee hearings on April 15, 2008 (Summary appears on NRDC website)

12 Testimony of Alan Goldhammer before the Senate Subcommittee, April 15, 2008

13 Testimony of Benjamin Grumbles, USEPA Assistant Administrator for Water before Senate Subcommittee hearings April 15, 2008

14 Dr. Mark LeChevallier, Director, Innovation & Environmental Stewardship, American Water

15 AWWARF Webcast, Dr. Shane Snyder

16 The report is available at: http://asdwa.citysoft.com/_uploads/documents/live/5-31draftlatestv3.pdf

17 http://www.epa.gov/safewater/watersecurity/pubs/very_small_systems_guide.pdf

18 On February 21, 2008, USEPA issued a draft CCL3 for public review and comment. The CCL contains 104 contaminants, including 93 chemicals, 11 microbiological contaminants and 1 pharmaceutical or PPCPs.

19 California, Arizona, Texas, and Florida

20 Wyoming does not have primacy for the SDWA and SDWA is implemented directly by EPA for that state.



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