

**Hearing before the
Sustainable Water Infrastructure Task Force**

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**Testimony of the
Pennsylvania Public Utility Commission**

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Good morning and thank you, Secretary McGinty, and members of the Sustainable Infrastructure Task Force, for the opportunity to present the Public Utility Commission's views on infrastructure sustainability. My name is Paul Diskin and I serve as the Energy/Water Manager for the Bureau of Fixed Utility Services. I have been asked to present the following testimony on behalf of the Public Utility Commission. We have been asked to comment on the scope of the Task Force's planned efforts, and we have been asked to offer recommendations to address the Commonwealth's infrastructure challenges. At the outset, we would like to commend Governor Edward G. Rendell for his foresight and leadership in establishing this Task Force. Utility infrastructure improvements in the Commonwealth are critical for the promotion of reliability, economic development and environmental protection.

While the status of Pennsylvania's infrastructure related to jurisdictional water and wastewater utilities is generally acceptable and receiving appropriate levels of replacement and/or repair, we have seen incidents that require special attention. For example, there has been a higher than normal number of water main breaks in the Pittsburgh area and Luzerne County, which resulted in this Commission opening an investigation of a water utility, the first phase of which has concluded with a number of recommendations for improving service.

As will be addressed, a comprehensive combination of regulatory mechanisms -- from full cost pricing ratemaking principles, to strengthening viability through fostering regionalization -- provides the framework for a reliable, sustainable infrastructure. We believe that some of these mechanisms may lend themselves for adaptation by non-jurisdictional water and wastewater utilities, especially the distribution system improvement charge or "DSIC," a proven method for accelerating the pace of infrastructure improvements at a reasonable cost. In addition, we offer recommendations for a collection system improvement charge or "CSIC" for wastewater utilities (requiring legislative authority), along with a call for increased regionalization to achieve operational efficiencies and economies of scale. Additional recommendations include increased water/energy synergies; consideration of a new water audit methodology; integrated water resource planning; and water affordability programs.

Regulatory Scope

The PUC regulates the rates and service of jurisdictional water and wastewater companies. The PUC does not regulate municipal water and wastewater authorities, mobile home parks, homeowners' associations or cooperatives. This can be compared to the regulatory scope of the Department of Environmental Protection (DEP) which regulates the water quality, under the parameters of the Safe Drinking Water Act (SDWA), of all 2,200 community drinking water systems, including the PUC jurisdictional systems. The two agencies share a

concurrent and sometimes overlapping regulatory scope. Whereas DEP's scope relates to health and safety issues within the SDWA, the PUC's scope encompasses the broader question of whether water supplied is fit for basic domestic purposes. Simply put, water may be potable but not palatable (or fit for household purposes). Water should not stain laundry or fixtures, prematurely retire water heaters or include residue or lack clarity. Additionally, adequate pressure must be available to enable normal water using tasks.

The PUC's regulatory authority provides for a comprehensive administrative procedure with due process afforded for all. An informal complaint process before the Bureau of Consumer Services exists, along with a formal complaint process before an Administrative Law Judge. For the formal process, a record of the proceeding is created to include testimony and evidence. An attorney is not needed for residential customers and the process is relatively cost-free and straightforward.

Size and its Impact Upon Viability

The PUC regulates the rates and service of 90 investor-owned water companies serving about 1.2 million residential customers or metered connections.¹ The PUC also regulates 27 municipal water utilities which serve outside of their corporate boundaries. As to wastewater utilities, the PUC regulates 61 investor owned utilities serving 31,000 customers along with five municipal wastewater systems that provide service to customers residing beyond the corporate boundaries. For both water and wastewater utilities, only nine and two systems, respectively, earn revenues reaching a million dollars or more. Ten and seven systems, respectively, earn between \$200,000 and \$900,000. The remainder includes even smaller systems which typically experience degrees of operational constraints which can impact and lessen customers' quality of service.

¹ For purposes of approximating the number of people served per residential connection, an average of 2.3 individuals per household is typically used. While all jurisdictional water utilities are required to provide metered service, exceptions exist for a few small systems where meters have not yet been installed due to severe financial or geographic constraints.

PUC JURISDICTIONAL WATER SYSTEMS

<u>REVENUES</u>	<u>SYSTEMS</u>	<u>CUSTOMERS</u> ²
"A" - \$1 Million and Over	9	1,168,335
"B" - \$200,000 to \$999,999	10	9,195
"C" – Less than \$200,000	+71	+ 9,014
Total IOUs ³	90	1,186,544
Municipals Serving "Outside" Customers	+27	
TOTAL JURISDICTIONAL	117	

PUC JURISDICTIONAL WASTEWATER SYSTEMS

<u>REVENUES</u>	<u>SYSTEMS</u>	<u>CUSTOMERS</u> ⁴
"A" - \$1 Million and Over	2	21,792
"B" - \$200,000 to \$999,999	7	5,389
"C" – Less than \$200,000	+52	+ 3,806
Total IOUs	61	30,987
Municipals Serving "Outside" Customers	+5	
TOTAL JURISDICTIONAL	66	

It should be noted that three of the four largest jurisdictional water systems are subsidiaries of the three largest water utilities in the country. The largest, Pennsylvania-American Water Company (PAWC) serves about 660,000 customers in 35 counties throughout the Commonwealth. Earning revenues of about \$400 million, this company, a subsidiary of American Water Works Company, Inc., is in the process of transitioning from the German-owned multinational holding company, RWE Aktiengesellschaft, to an independent, publicly-traded company providing water and wastewater service in 32 states. PAWC also owns three wastewater systems in the Commonwealth. The second largest, Aqua Pennsylvania, is owned by Aqua America, serving about 403,000 customers in 27 counties statewide. Aqua earns revenues of about \$283 million. Aqua America operates in 13 states in the country. It is currently the largest American held water utility. Aqua also owns 13 wastewater systems.

The third and fourth largest water utilities are similar in size, with the York Water Company being slightly larger. York serves about 56,000 customers in 37 communities in York and Adams counties and earns revenues of approximately \$29 million. United Pennsylvania serves about 50,000 customers in seven counties, the largest footprint being close by in the Harrisburg suburbs and in

² As of December 31, 2006

³ As of December 31, 2007; "IOUs" is the acronym for investor owned utilities

⁴ As of December 31, 2006

Hummelstown. United earns revenues of approximately \$26 million. United is a subsidiary of United Waterworks, Inc. a Delaware corporation, which is wholly owned by United Water Resources, Inc., headquartered in New Jersey. Suez SA, a French corporation, is the corporate parent of United Water Resources and is in the process of being merged with Gaz de France, an integrated electric and gas utility whose ownership includes the French government.

While many well-run water systems are owned and operated in the state, the brief descriptions of PAWC, Aqua and United are noteworthy for several reasons. Due to the size and geographic location of each system's parent as well as where subsidiaries serve, unique resources may be tapped, to the benefit of ratepayers and the local economy. These include specialized expertise relating to state of the art water treatment technologies, expansive research, and access to capital at competitive rates. Pennsylvania's customers and economy benefit from having the presence of the caliber of utilities represented. At the same time, however, the Commission works to ensure that the local focus remains, despite ownership based in other countries or states.

Viability standards relating to the technical, managerial and financial wherewithal of water and wastewater systems are essential to be maintained in order to ensure safe and reliable service under the Public Utility Code. In 1993, the Commission adopted a Policy Statement on Viability which sets the framework for the Commission's comprehensive regulatory program which is geared toward fostering viability for all systems, including the smallest.⁵ The Commission recognizes that viable systems are essential to strong communities and that there is a direct impact upon health, quality of life and economic development.

The Commission also recognizes that smaller water and wastewater utilities may experience compromised viability that needs to be rectified. Solutions to the most challenging of the small system dilemmas include various forms of regionalization. Endorsed by the Commission for many years, regionalization improves service through resource coordination and increased economies of scale. A flexible approach, regionalization can include various forms, including physical interconnection where appropriate, acquisitions and mergers, management of satellite systems and contracts for professional management.

Since the early 1990s, many successful regionalization projects have occurred and have greatly reduced the number of jurisdictional water utilities from nearly 430 to the 90 investor owned regulated today. A number of factors contributed, but the resolution of some of the most serious of troubled water company problems can be attributed to the regionalization efforts by PAWC, Aqua, United and the York Water Company. Another contributing factor was the Commission's Policy

⁵ *Policy Statement Re: Small Drinking Water System Viability and Memorandum of Understanding between Department of Environmental Resources and Pennsylvania Public Utility Commission*, Docket No. M-00930488, Order adopted November 10, 1993 and codified at 52 Pa. Code §69.711, *Small Nonviable Water and Wastewater Systems – Statement of Policy*

Statement on Acquisition Incentives to encourage the takeover of smaller, troubled systems and recently expanded to continue to remove barriers from viable systems regionalizing smaller, troubled systems.⁶ A choice of four recommended incentives are possible, including a rate of return premium; an acquisition adjustment for circumstances when acquisition costs are greater than the depreciated original cost, the reasonable excess may be added to the rate base of the acquiring utility and amortized as an addition to expense over a ten-year period; deferral of acquisition improvement costs or allowing a plant improvement surcharge. The policy statement was amended in 1996 to further clarify original cost filing data, while also expanding it to encourage acquisitions not only of chronically non-compliant water systems, but also of proactive acquisitions of smaller systems where the acquisition is clearly serving the public interest, such as prevention of future noncompliance.⁷

Furthermore, the success has also been dependent upon the excellent ongoing interagency coordination we have experienced with DEP, particularly through the Commission's Small Water Company Task Force. The two agencies formalized this interagency coordination by the signing of a Memorandum of Understanding (MOU) in 1993.⁸ The PUC also entered into an MOU with PennVest.⁹ From our work with our sister public utility commissions around the country, I can tell you having a successful interagency cooperation and an infrastructure improvement loan program like PennVest makes us the envy of all.

Rate Setting, Accountability and Prevention of Deferred Maintenance

Under the Public Utility Code, the rate setting process employed is known as rate-base, rate-of-return regulation which ensures that utilities are charging just and reasonable rates and that expenses claimed are prudently incurred. The rates are set to be non-discriminatory and equitable among customer classes.¹⁰ Of particular value to this hearing on sustainable infrastructure is the fact that rates are to include all essential elements of providing safe and reliable service. Deferral of maintenance is not allowed, particularly avoidance of prudent infrastructure investment. This full cost of service component is a critical element within any discussion of asset management and sustainable infrastructure.

⁶ *Policy Statement Re: Incentives for the Acquisition and Merger of Small, Nonviable Water and Wastewater Systems*, Docket No. M-950686, Order adopted February 22, 1996

⁷ *Acquisitions of Viable Water and Wastewater System – Statement of Policy*, 66 Pa. Code §69.721

⁸ *Memorandum of Understanding between Pennsylvania Department of Environmental Resources and Pennsylvania Public Utility Commission*, Docket No. M-00930488, Order adopted on October 28, 1993

⁹ *Memorandum of Understanding between Pennsylvania Infrastructure Investment Authority and Pennsylvania Public Utility Commission*, Docket No. M-00970725, Order adopted on April 24, 1997

¹⁰ Residential, commercial and industrial

The rate setting process also provides customers with the opportunity to participate. In turn, the Commission is obligated, through what is known as the Regulatory Compact, to reach decisions that are in the public interest, that are fair, timely and that rates are compensatory to encourage investment. In addition to equitable rate setting, the Commission ensures equitable customer billing, metering, and overall service quality, including useful and timely customer communications. The Commission's important role in regulating the rates and quality of service was recognized and reiterated in the Legislative Budget and Finance Committee's (LB&FC's) recent legislative performance audit of the PUC.¹¹ In its report, the LB&FC recommended that the PUC's jurisdiction be extended to municipal authorities when serving customers that live outside the bounds of the municipality that appoints the authority member.

Overall, assurance of accountability prevails throughout the entire process which entails a review of all aspects of operations, along with the provision of incentives to boost and/or ensure appropriate performance. Where shortcomings are found, directives are provided for improvements to occur within specific timeframes. Safe and reliable service, along with efficient operations, are verified within a combination of the rate case review process, management and other types of audits, on-site inspections and resolution of customer complaints.

Distribution System Improvement Charge

Nationwide, it is common knowledge that utility infrastructure is deteriorating throughout the country and this dilemma must be addressed in a timely, cost-effective manner. The U.S. Environmental Protection Agency cites a \$276.8 billion need to upgrade or replace drinking water infrastructure over the next 20 years.¹² Here in the Commonwealth, the state's portion of drinking water infrastructure needs exceeds \$10.8 billion over the next 20 years.¹³

Many water utilities were built more than a century ago and much of today's plant in service requires expensive upgrading. The unprecedented magnitude of the extent of needed infrastructure upgrades, along with the high cost, call for innovative solutions. Mains that were first placed into the ground a century ago cost approximately \$1 a foot. Today, the remediation or replacement costs range from \$61 to \$100 per foot. Prior to the implementation of the distribution system improvement charge (DSIC) under traditional ratemaking, the pace of remediation ranged from a few hundred years to 900 years, or not in any way

¹¹ The Legislative Budget and Finance Committee, *The Legislative Budget and Finance Committee Performance Audit of the Pennsylvania Public Utility Commission*, January 2007, www.lfbc.legis.state.pa.us.

¹² Innumerable articles have documented this situation, among the most well known is the American Society of Civil Engineers, *Report Card for America's Infrastructure*, 2005; water and wastewater infrastructure received grades of "D minus; the grade for American's infrastructure overall was a "D."

¹³ *Ibid.*

nearing a realistic timeframe to match the actual service lives of mains (approximately 75 to 125 years, with exceptions based on materials and soils).

Fortunately the Pennsylvania General Assembly enacted DSIC¹⁴ a decade ago after realizing the significant price tags that are associated with maintaining the state's aging water infrastructure. The DSIC allows jurisdictional water companies to use a surcharge on customers' bills to fund more upgrades of aging infrastructure than would otherwise be feasible at a reasonable rate for customers. The Commission regularly reviews the water utilities' DSIC expenditures by making certain that the amount of money expended is on DSIC-eligible property. Revenue-neutral projects allowed under DSIC include main/valve replacement; main cleaning and relining; fire hydrant replacement; main extensions to eliminate dead ends; solutions to regionalization projects; and meter change-outs.

The cost of the surcharge is small when compared to the noticeable benefits, with approximate average monthly costs to ratepayers ranging from a few cents a month to about \$1.50. A number of consumer protections are built into the DSIC mechanism such as a cap on the percentage charged of the total bill, an annual reconciliation audit and the requirement for customer notice.

Because of the DSIC, water customers experience improved water quality, greater rate stability and increased water pressure. Further benefits include fewer main breaks and service interruptions, along with lower levels of unaccounted for water. Another critical, if indirect, benefit makes the DSIC a favorite among local firefighters – that is the improved fire protection that results due to increased pressure and reliability. The DSIC has had substantial impact on accelerating infrastructure remediation in Pennsylvania. Prior to the DSIC, water utilities' progress in upgrading infrastructure relative to actual service lives was a major challenge.

If there were ever an ideal regulatory tool created in Pennsylvania that is recognized as a best practice around the country, it is the DSIC. Its main features are that it is:

- Pro-environmental as it significantly decreases unaccounted for water, as water is one of our most precious resources;
- Promotes a major objective of this Administration and the General Assembly which is to update Pennsylvania's aging infrastructure; and it
- Promotes economic development as it creates and maintains hundreds of jobs.

¹⁴ See *Petition of Philadelphia Suburban Water Company for Approval to Implement a Tariff Supplement Establishing a Distribution System Improvement Charge*, Docket No. P-00961036, Order adopted on August 22, 1996 and *Petition of Pennsylvania-American Water Company for Approval to Implement a Tariff Supplement Establishing a Distribution System Improvement Charge*, Docket No. P-00961031, Order adopted on August 26, 1996. See also Act 156 of 1996 and 66 Pa. C.S.A. §1307(g)

In fact, DSIC is one of the most important regulatory tools of the past decade. It has been cited by the National Association of Regulatory Utility Commissioners as a "Best Practice"¹⁵ and it has been designated by the Council of State Governments as "model legislation."¹⁶ Legislatures in six other states have since recognized that a new regulatory mechanism was needed to accelerate the pace of infrastructure upgrades at a reasonable cost.¹⁷

Due to the DSIC and other innovative regulatory mechanisms, Standard & Poor's has recognized the PUC for effectively encouraging water company investment. In addition, the 2007 Performance Audit conducted by the Legislative Budget & Finance Committee (LB&FC) called the DSIC a successful program and recommended expanding it to other utilities such as wastewater.

DSIC has been a key response toward resolving the challenge, so much so we recommend it for adaptation by non-jurisdictional utilities and Commission staff would be available for informal start-up assistance if needed. It would seem to be consistent with the U.S. Environmental Protection Agency's "Four Pillar" approach toward water system sustainability, especially as it relates to asset management and sustainable infrastructure.

Legislative Authority for the Collection System Improvement Charge

According to the American Society for Civil Engineers, Pennsylvania's wastewater infrastructure will need an \$8 billion investment over the next 20 years.¹⁸ In 2003, the PUC approved a Collection System Improvement Charge (CSIC), which would allow the state's wastewater utilities to use a surcharge similar to DSIC to upgrade its aging infrastructure. Based upon the success of DSIC, the Commission believed that many of the challenges facing the wastewater utilities could be addressed in this manner.

Unfortunately, the Commonwealth Court concluded in 2005 that the Commission did not have the authority to approve a rate mechanism such as CSIC to recover these costs. The state Supreme Court denied petitions to appeal.

The LB&FC performance audit recommended that the General Assembly amend the Public Utility Code to give the PUC authority to establish a CSIC program for wastewater companies. Not only would the CSIC accelerate aging infrastructure upgrades, it would also help resolve overflows from sanitary sewer systems and from combined sewer systems. The General Assembly has been discussing this

¹⁵ NARUC Board of Directors, "Resolution Supporting Consideration of Regulatory Policies Deemed as Best Practices," July 27, 2005

¹⁶ Council of State Governments, *Suggested State Legislation*, 2000 Volume 59, 1999

¹⁷ The six states are: Indiana, Illinois, Delaware, Ohio, Missouri and Connecticut; additionally a DSIC tariff is utilized in New York and California under more limited parameters.

¹⁸ *Ibid.*, American Society of Civil Engineers

recommendation and the PUC strongly supports such legislation and hopes it will be enacted.

Utility Bill Comparison: What's Included?

The LB&FC performance audit reviewed combined average annual water and wastewater bills in 50 states finding a range from \$334 (Nebraska) to \$721 (Hawaii).¹⁹ In Pennsylvania, the combined water and wastewater bill was \$492, with ten states having higher bills. One explanation for the higher bills is that infrastructure remediation is occurring more rapidly due to DSIC and PennVest. The most typical rate comparison we normally see is that between bills of government-owned systems versus investor owned. Among the questions to ask when making such comparisons are: whether infrastructure maintenance is ongoing or deferred; whether current technology is in place or is it outdated; and whether customer service is responsive or ineffective. In addition, government-owned systems generally do not pay taxes and have been eligible for grants and low-interest loans not available to investor owned water companies.

Affordability

Although jurisdictional water companies charge full cost of service rates, the level set must be reasonable. Unfortunately, some customers experience difficulty paying their water bills. Accordingly, the PUC encourages utilities to establish Customer Assistance Programs (CAPs) for such ratepayers. All four of the PUC's largest jurisdictional water utilities have successful low-income assistance programs in place. Affordability is critical when the effect of water service terminations is considered. Termination of water service can lead to termination of wastewater service, which can lead to uninhabitable housing which, in turn, can lead to serious health concerns.

Components of water-affordability programs may include: coordination with local community based organizations to administer and determine eligibility; cash assistance for arrearage reduction or current bill payment; funding through company/shareholder/employee/customer opt-in match; conservation education and/or plumbing devices; repair of minor plumbing leaks; and/or a low income rate.

Educating customers about the value of water conservation and using water wisely is an essential component of helping to keep water bills from climbing unnecessarily, especially due to leakage. In fact, several customer assistance programs include payment of some minor plumbing repairs in recognition of this common problem.

In addition to CAPs, other regulatory mechanisms available to assist with affordability include payment arrangements; regionalization to achieve

¹⁹ Developed by LB&FC from 2000 U.S. Census Data

economies of scale, along with increased levels of service; and rate increase phase-ins to mitigate rate shock.

Affordability is being mentioned today not only because of its social value, but because it is our opinion that no water system should avoid essential infrastructure upgrades to meet the financial constraints faced by a segment of customers. Instead, we believe that targeting those in need and directing them toward a customer assistance program and/or using the regulatory mechanisms above provides the answer. We believe that the essential infrastructure improvements should be made, without which, our state's health, safety and our economy will be jeopardized.

Enhancements to Infrastructure Reliability

As part of an investigation into an inordinate amount of main breaks experienced by a large water company, recommendations were developed for improved reliability.²⁰ The investigation was conducted in two phases, the second of which is nearing completion. The first phase of the investigation produced recommendations for: enhanced main remediation criteria, including the recognition of the frequency of breaks and leaks on smaller mains; the broader use of newer technologies in areas prone to breaks; the implementation of advanced leak detection methods; and improved contact information for more effective and ongoing communications during outages. It should be noted that a number of these recommendations have since been implemented. Following completion of the second phase, it is expected that a number of these recommendations can be applied to many other utilities throughout the state.

In another Commission investigation, an unexpected yet valuable outcome resulted with the development of a new public notification policy during service interruptions.²¹ Essentially, it was discovered that communication methods relied upon were not taking advantage of today's newer technologies that enable notification closer to "real time." Older methods such as contacting the media simply are not as realistic in today's world of cell phones, faxes and web-based information. Accordingly, one of the most useful new technologies is now being implemented in the larger systems, the rapid alert messaging service. This is a computer generated process which can automatically alert designated groups of customers with a recorded message in a very brief timeframe.

Consumer Education and Value of Drinking Water

Four years ago, the Commission launched a consumer-education effort to inform Pennsylvanians about how drinking water is regulated; ways to conserve this

²⁰ *Investigation into Pennsylvania-American Water Company's Main Breaks in the Pittsburgh Area and Related Incidents Statewide – Phase I*, Docket No. I-00060112, Adopted at Public Meeting of June 21, 2007.

²¹ *Policy Statement Related to Unscheduled Water Service Interruptions and Associated Actions*, 52 Pa. Code, §69.1601-1603

precious resource; and low-income programs available to help pay bills. Consumer-education brochures and fact sheets are distributed to consumers throughout the year. Additionally, the Commission marks National Drinking Water Week each May. Earlier this week, Chairman Holland, Commissioner Pizzingrilli and House Consumer Affairs Committee Chairman Joseph Preston Jr. visited one of many water infrastructure improvement projects undertaken statewide to highlight the need for sustainable water infrastructure.

Because reliable water service is typically taken for granted, educating customers about its value is essential in their understanding of the need for and significant cost of water utility infrastructure improvements. Additionally, since most of the infrastructure is buried and out of sight, it is even further from customers' focus unless and until their service is interrupted. Optimal educational materials should include a synopsis of how sources of supply are treated for drinking water and delivered to homes, schools and businesses; the numerous measures taken to ensure safety and reliability; the associated costs; the comparison of price to value; a discussion of the necessity of everyone's active role in maintaining the quality of source waters; and the fact that there is no substitute for the service, especially at the price charged.

Water/Energy Synergies

Water treatment and distribution are highly dependent upon energy, primarily for pumping. Similar energy dependencies exist for wastewater collection and treatment. Energy production relies heavily upon water, primarily for cooling (noting, however, that the generators became non-jurisdictional since electric restructuring). In fact, energy production consumes the largest amount of water in the state. Increased efficiencies by the water, wastewater and energy industries result in financial savings on the expense of purchased power and water (where applicable), but reduction of water use has become increasingly more important as this resource has become more limited in some areas at given periods of time. Although Pennsylvania is typically "water-rich," the ongoing drought patterns, along with climate change bode well for efforts to increase efficiencies.

Additionally, optimizing the water and energy synergies will become even more critical and cost-effective as electricity rate caps are removed from customers' bills. Some water utilities may find that hourly rates will apply and may choose to purchase energy from an alternate supplier. More efficiencies can be uncovered, some of the most promising include: for water utilities, high efficiency pumps and installing micro-turbines in major transmission lines for pressure reduction and renewable energy generation; electric industry rate incentives for diesel/gas back-up generators to help water companies save costs by avoiding peak hourly rates while shaving the electric company's system load; and for wastewater utilities, methane capturing and/or burning for power generation. Utilities could take advantage of alternative energy credits, not only within Pennsylvania but also may have applicability within the entire PJM market,

which includes all or parts of 13 states and the District of Columbia. For energy utilities, some have utilized alternative cooling methods to limit water use. Ratepayer savings exist as well. When less hot water is used, energy savings can occur along with water bill savings. Installation of efficient appliances should be encouraged where possible, such as front-load washing machines and tank-less or point-of-use water heating devices.

Wise Water Usage / Integrated Water Resource Management

Efforts to ensure sustainable infrastructure include a combination of components, many of which have already been addressed. These include a relevant prioritization process to address main replacement or cleaning and relining and facilitation of repayment of the investment through cost-based rates, including the DSIC mechanism. In addition, a comprehensive approach to wise water usage is also advised. In the early 1980s, the PUC instituted a Comprehensive Water Conservation Policy²² which addresses: 1) customer education; 2) water audits for large users; 3) water efficient plumbing fixtures; 4) unaccounted-for water; 5) ongoing leak detection; 6) universal metering;²³ and 7) a conservation contingency plan.²⁴

Building on these basics, a broader integrated water resource management (IWRM) approach appears to hold much promise for maximizing limited resources (in terms of both water and finances) while benefiting the environment. This holistic approach has been defined as the “management of the whole hydrologic cycle to achieve a coherent set of water resource policies and uses that balances all reasonable social, environmental and economic needs in a sustainable way.”²⁵ Eight general components and stakeholders are involved in IWRM; these are: source of supply regulation; community/stakeholder representation; investor owned systems; government owned systems; national, state, regional, local jurisdiction; economic regulation; quality regulation; and regionalization/cross jurisdiction.²⁶ The relevance to a discussion of sustainable infrastructure is that, through IWRM, a more comprehensive balance of competing uses can be achieved to more efficiently and cost-effectively meet the water supply and quality challenges before us. Sustainable infrastructure is a critical component of ensuring safety, reliability and affordability.

Barriers to IWRM exist, especially the fragmentation of both the water industry and its regulation, but a review of the benefits by the Task Force on Sustainable Infrastructure could assist with boosting cooperation. Public/private partnerships may be ideal for IWRM projects. Projects encompassing IWRM

²² *Policy Statement on Water Utility Conservation Measures*, Docket No. L-8880040, Order adopted on April 7, 1988, codified at 52 Pa. Code, §65.20

²³ See also 52 Pa. Code §65.7

²⁴ See also 52 Pa. Code §65.11

²⁵ American Water presentation before the NARUC 35th Annual Eastern Utility Rate School, October 26, 2007

²⁶ *Ibid.*

have resulted in a broad range of environmental benefits, coupled with financial savings, such as: reduced water consumption and wastewater discharge; recycling of wastewater discharge for irrigation; groundwater recharge; improved water quality, storm water control; wetlands restoration; more affordable customer rates; watershed sediment reduction; reduced truck travel, air pollution and landfill space; and reduced erosion.²⁷

Summary of Recommendations for Task Force Consideration

A number of these recommendations for Task Force consideration have been discussed previously in this testimony; others are briefly described with further information to be produced upon request:

- To accelerate water utility infrastructure remediation at a reasonable rate, adapt the Distribution System Improvement Charge for applicable non-jurisdictional water utilities;
- To accelerate jurisdictional wastewater infrastructure remediation at a reasonable rate, support legislative authority for the Collection System Improvement Charge for jurisdictional wastewater systems;
- For all other wastewater systems, to accelerate wastewater infrastructure remediation at a reasonable rate, adapt the Collection System Improvement Charge for applicable non-jurisdictional wastewater utilities;
- To further ensure infrastructure upgrades for non-jurisdictional water and wastewater utilities, adopt full cost pricing rate setting, with all utility rate revenue allocated toward water utility operations;
- To better ensure infrastructure re-investment by non-jurisdictional water and wastewater utilities, adopt the Uniform System of Accounts,²⁸ which, among other things, would enable a depreciation expense to be built into rates;
- To target low income customers having difficulty meeting their bill obligations, establish customer assistance programs;
- To further resolve the troubled water system challenge, expand regionalization efforts, including mandatory takeover regulations amended to apply to all ownership types of chronically non-compliant water systems (versus the current limitation of the PUC being authorized to direct a jurisdictional viable system to take over a chronically non-compliant jurisdictional system even if a viable non-jurisdictional system is the more logical choice);
- To minimize the time period for customers experiencing long-term boil water notices, limited supply or other related problems occurring during the pendency of the litigation process for the most serious of chronically

²⁷ *Ibid.*

²⁸ See Docket No. L-00950110, Order adopted July 31, 1997, codified at 52 Pa. Code, §65.16. See also *Uniform System of Accounts*, 1996, National Association of Regulatory Utility Commissioners, www.naruc.org

- non-compliant systems where customers' health could be jeopardized, develop a new, more expeditious receivership appointment process;
- To further promote wise water use and operating efficiencies for non-jurisdictional water systems, institute a comprehensive water conservation policy similar to 52 Pa. Code §65.20;
 - To maximize limited resources (both financially and related to water supply) and balance competing uses to both benefit social values and improve the environment, incorporate an integrated water resource management approach as applicable;
 - To provide municipal water authority customers living outside the bounds of the municipality that appoints the authority members with the same customer protections and oversight provided to customers of municipally-owned water systems, extend Public Utility Commission jurisdiction to the water authority's "outside" customers.
 - To expand customer protection over rates and service to all customers of the Commonwealth's 2,200 community drinking water systems, along with easing the fragmented regulatory structure, thereby easing regionalization and other efforts to strengthen the water and wastewater utility industries, extend Public Utility Commission jurisdiction to all currently non-jurisdictional water and wastewater systems, with consideration given to implementing an interim regulatory process whereby the Commission could assert jurisdiction on an as-needed basis, such as for complaint handling and rate cases and relinquish jurisdiction until needed;
 - To save costs and water, and produce some renewable energy, incorporate water/energy synergies where applicable;
 - To most efficiently target infrastructure remediation dollars, review benchmarks for relevant infrastructure replacement prioritization methodologies;²⁹
 - To garner understanding and support for costly upgrades of water and wastewater infrastructure, public education efforts about the value of drinking water and how it is treated and distributed should be broadened by utilities and public agencies alike, noting that many excellent educational campaigns already exist, including those designed by the U.S. Environmental Protection Agency, the American Water Works Association (*Only Tap Water Delivers*) and the Water Environment Federation (*Water is Life and Infrastructure Makes it Happen*); and
 - To more efficiently determine water losses and improve system reliability and financial viability, replace reliance upon the unaccounted-for-water methodology with the newer water audit methodology, adopted by the American Water Works Association.

²⁹ See: www.AWWA.org