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AZ CORP COMMISSION
DOCKET CONTROL

BEFORE THE ARIZONA CORPORATION COMMISSION

7 IN THE MATTER OF THE APPLICATION
8 OF ARIZONA WATER COMPANY, AN
9 ARIZONA CORPORATION, FOR A
10 DETERMINATION OF THE FAIR VALUE
11 OF ITS UTILITY PLANT AND PROPERTY,
12 AND FOR ADJUSTMENTS TO ITS RATES
13 AND CHARGES FOR UTILITY SERVICE
14 AND FOR CERTAIN RELATED
15 APPROVALS BASED THEREON.

Docket No. W-01445A-08-0440

**CERTIFICATE OF FILING
COMPLIANCE ITEM**

Arizona Corporation Commission

DOCKETED

JUL 22 2011

DOCKETED BY

13 The Arizona Corporation Commission (the "Commission"), in Decision No. 71845 (the
14 "Decision") at page 95, lines 1-7, ordered Arizona Water Company (the "Company") to prepare
15 a study on Distribution System Improvement Charges ("DSIC") designed to implement leak
16 detection devices and make conservation based repairs to infrastructure. The Commission
17 further ordered that the study should further detail costs, rate impacts and consider how to
18 balance costs and benefits for customers and that the Company shall undertake this study and
19 file a report detailing the findings of this study by June 30, 2011, with Docket Control, as a
20 compliance item in this docket.

21 The Company filed the initial form of the DSIC study in this docket on June 29, 2011 in
22 compliance with the Decision. The Company is now filing an update to the DSIC study in this
23 docket, attached hereto as Attachment A.

1 RESPECTFULLY SUBMITTED this 22nd day of July 2011.

2
3 **ARIZONA WATER COMPANY**

4
5 By: Robert W. Geake
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12 **CERTIFICATE OF SERVICE**

13 An original and thirteen (13) copies of the foregoing were delivered this 22nd day of July, 2011
14 to:

15 Docketing Supervisor
16 Docket Control Division
17 Arizona Corporation Commission
18 1200 West Washington Street
19 Phoenix, Arizona 85007

20 A copy of the foregoing was mailed this 22nd day of July, 2011 to:

21 Honorable Lyn Farmer
22 Chief Administrative Law Judge
23 Hearing Division
24 Arizona Corporation Commission
25 1200 West Washington Street
26 Phoenix, Arizona 85007

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By: Robert W. Beake



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Introduction and Background

In Decision No. 71845, the Arizona Corporation Commission (the "Commission") ordered Arizona Water Company (the "Company") to prepare a study on Distribution System Improvement Charges ("DSIC") designed to implement leak detection devices and make conservation-based repairs to infrastructure, and to file a report detailing the findings of this study with the Commission. The Commission stated that an infrastructure funding mechanism may be reasonable for certain of the Company's aging systems, or for systems that face other unique challenges. Further, the Commission ordered that the information contained in the study should be used by the Company to further develop this issue for future Commission consideration.

This DSIC study examines costs and effects on customer rates and takes into consideration how to balance the costs and benefits of necessary infrastructure replacements for customers. It is submitted to the Commission to provide the information discussed above, to establish the basis and need for implementing a DSIC mechanism to address aging and failing infrastructure, and to urge the Commission to approve such a mechanism in the Company's general rate cases.

The Company is a public service corporation which provides public utility water service in portions of Cochise, Coconino, Gila, Maricopa, Navajo, Pima, Pinal and Yavapai Counties in Arizona pursuant to certificates of convenience and necessity granted by the Commission. The Company operates twenty-two (22) public water systems that serve approximately 84,300 customers.

Historical Development of DSIC

The pressing need to replace aging drinking water infrastructure has been brought to the forefront of public attention by entities such as the United States Environmental Protection Agency (the "EPA") and the American Society of Civil Engineers (the "ASCE"). The ASCE's *2009 Report Card for American Infrastructure* gave the nation's aging drinking water system infrastructure a grade of D minus.¹ In addition, the EPA, in its report entitled *Drinking Water Infrastructure Needs Survey and Assessment*, projected a twenty-year capital improvement funding need of \$334.8 billion.²

In Decision No. 71845, the Commission noted that aging infrastructure is often seen as an East Coast or Midwest phenomenon. However, according to the EPA report cited above, water providers in Arizona will need to fund nearly \$7.4 billion of water system infrastructure replacements over the next twenty years, over half of which is needed for transmission and

¹ Exhibit A: *2009 Report Card for American Infrastructure – Water and Environment, Drinking Water* produced by American Society of Civil Engineers.

² Exhibit B: *Drinking Water Infrastructure Needs Survey and Assessment, Fourth Report to Congress* by the United States Environmental Protection Agency.

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distribution system replacements. The EPA report further identified infrastructure funding needs for medium and small-sized water providers in Arizona as \$2.1 billion and \$889 million, respectively.

The EPA report classified medium sized community water systems as those that serve more than 3,300 but less than 100,000 persons. Community water systems serving 3,300 persons or fewer are classified as small. Based on the EPA's classification the Company's Ajo, Stanfield, Tierra Grande, Coolidge Airport and Winkelman systems are classified as small systems. All of the Company's other systems are classified as medium systems.

In recognition of this growing crisis, regulated water utilities have begun to develop ways along with their state regulatory commissions, to provide rate mechanisms to help fund the replacement and rehabilitation of failing infrastructure while, at the same time, balancing financial stability with customer affordability. In 1996, Philadelphia Suburban Water Company ("PSWC") petitioned the Pennsylvania Public Utility Commission ("PPUC") for approval of a DSIC. The PSWC DSIC was designed to recover the fixed costs (depreciation and pre-tax return) of certain non-revenue-producing infrastructure rehabilitation and replacement projects completed and placed in service between rate cases. In its petition to the PPUC, PSWC presented evidence that it was only able to replace/rehabilitate fifteen (15) miles out of a total of 3,130 miles of transmission and distribution mains or less than one-half of one percent each year, due to funding limitations. According to PSWC, at that pace, it would take approximately 212 years to complete all of the needed replacements/rehabilitations to its transmission and distribution mains. PSWC also noted that the DSIC would help it break the cycle of filing for general rate increases every fifteen (15) months, thus reducing the frequency of rate filings to the benefit of both customers and the PPUC.

The DSIC proposed by PSWC included a number of limitations. Among these were restrictions on the type of utility plant eligible for cost recovery, quarterly filing requirements, a cap on the maximum amount of revenue that could be collected by the DSIC, an eligibility earnings test, and a true-up mechanism which reset the DSIC to zero when the underlying utility plant was included in base rates in a subsequent general rate case.

In approving the DSIC in late 1996, the PPUC noted that: "PSWC and other Pennsylvania water companies had been required to make significant investments in new utility plants for projects such as the filtration of surface water supplies, the replacement of aging water distribution plant and the implementation of meter replacement programs. In addition, water companies face the daunting challenge of rehabilitating their existing distribution infrastructure before the property reaches the end of its service life to avoid serious public health and safety risks".³

Following its adoption by the PPUC, public utility commissions in many other jurisdictions, including Delaware, California, Connecticut, Indiana, Illinois, Missouri, New York

³ Exhibit C: *Petition of Philadelphia Suburban Water Company for Approval to Implement a Tariff Supplement Establishing a Distribution System Improvement Charge; Doc. No. P-00961036, Opinion and Order.*

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and Ohio, adopted DSIC-type mechanisms.⁴ In early 1999, the National Association of Regulatory Utility Commissioners ("NARUC") endorsed the mechanism as an example of an innovative regulatory tool that other public utility commissions should consider adopting to solve infrastructure remediation challenges.⁵ In 2005, NARUC adopted a resolution identifying the DSIC as a Regulatory Policy Best Practice.⁶

At the 1998 National Association of Water Companies' Pennsylvania Forum, Commissioner Norma Brownell of the PPUC reported that implementation of the DSIC created little consumer reaction and resulted in infrastructure investment that otherwise would not have occurred. In a July 2007 Public Meeting, PPUC Chairman Wendell F. Holland further praised the DSIC mechanism "as one of the most important regulatory tools of the past decade," and additionally noted the consumer safeguards that were established in conjunction with adoption of the DSIC, such as DSIC revenues capped at a percentage of general revenues, resetting the DSIC to zero at the time of the next general rate case, providing notice to customers of any change in the DSIC rate, audits conducted as needed, and an annual reconciliation audit.⁷

While the DSIC has become an important regulatory tool in other jurisdictions, it has not yet been approved in Arizona. However, in Docket No. W-01303A-05-0405, the Commission adopted a Public Safety Surcharge in Paradise Valley for Arizona American Water Company. This type of surcharge was specifically designed to provide funding for the replacement of undersized and inadequate water mains in the Town of Paradise Valley. While the Public Safety Surcharge collected funds in advance of construction, the DSIC is more like the Arsenic Cost Recovery Mechanism ("ACRM"), which was developed through the collective efforts of the Company, the Commission Staff and the Residential Utility Consumer Office ("RUCO"). The ACRM allows utilities that construct arsenic treatment plants to seek recovery of capital costs and narrowly defined components of arsenic treatment plant operating costs incurred between formal rate filings. Without this progressive recovery method, a significant number of the State's water utilities would not have had the financial ability to comply with new, more stringent, safe drinking water standards for arsenic.

Assessment of the Company's Distribution Systems

Due to the phenomenal rate of growth seen in the last decade, there is a common misconception that water distribution systems in Arizona are relatively young and that there is no aging infrastructure crisis in this state. In fact, many of the Company's water systems are comprised of a large percentage of aging water mains and service lines that are approaching or have already exceeded the end of their useful service lives, and many of those facilities are obsolete or failing. In the Bisbee system, for example, a significant portion of the water mains

⁴ Exhibit D: *DSIC-type Mechanism by State.*

⁵ Exhibit E: *National Association of Regulatory Utility Commissioners ("NARUC") Resolution Endorsing and Co-Sponsoring the Distribution System Improvement Charge, 1999.*

⁶ Exhibit F: *National Association of Regulatory Utility Commissioners ("NARUC") Resolution Supporting Consideration of Regulatory Policies Deemed as "Best Practices", 2005.*

⁷ Exhibit G: *Motion of Chairman Wendell F. Holland, Docket No.: P-00062241, et al.*

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date back to the early 1900s, and nearly thirty-five percent (35%) of that system's water mains, many of which have a history of chronic leaks, have reached the end of their useful service lives and need to be replaced. Even water systems viewed as more modern, such as the Company's Pinal Valley water system, have many water mains that were installed during the period of time from the 1920s through the 1940s.

The materials used in the manufacture of pipe and services play a significant role in determining the useful service lives of water mains, service lines and other distribution system components. For water mains constructed of ferrous pipe materials, such as cast iron, steel, galvanized steel or ductile iron, corrosion causes pitting of the pipe material. Eventually, the corrosion continues until a hole is formed in the pipe wall leading to a water leak. In advanced stages of corrosion, water mains can fail completely, resulting in water main breaks, often causing costly damage to the water facilities, the roadway and nearby property. In addition, corrosion can lead to the formation of tuberculation, which restricts the flow of water.

Water mains constructed of non-ferrous pipe materials, such as polyvinyl chloride ("PVC") and cement asbestos ("CA"), can become brittle or lose their physical integrity over time through various physical and chemical causes. Even the gasket materials made to seal the joints between pipes can degrade and fail. CA pipe, which has been used since the 1930s, loses physical strength through the leaching of cement or binding agents caused by corrosive soil conditions. This loss of physical strength or integrity leads to increased frequencies of water main leaks and breaks.

Water service lines are typically constructed of copper or polyethylene. Other materials have also been used, such as galvanized steel and PVC. Copper service lines can become pitted by internal or external corrosion leading to leaks or breaks. In the 1970s, the use of polyethylene for water service lines became commonplace however, it has been found that these materials become brittle and split longitudinally as they age, making repairs impractical and requiring complete replacement as leaks are discovered. Corrosion of galvanized steel service lines leads to similar signs of failure, including pitting and tuberculation, as seen in galvanized steel water mains.

Soil condition is an example of the factors that contribute to corrosion of water mains. When the Company first considered the use of ductile iron pipe, it conducted a number of soil surveys with help from professional engineers working for the Ductile Iron Pipe Research Association ("DIPRA"). Those soil surveys looked for certain soil attributes or conditions that could lead to corrosion. For water mains made from ferrous materials, such as ductile iron pipe, the presence of water, oxygen, conductive soils, sulfate reducing bacteria, and nearby cathodic protection systems were found to accelerate or promote corrosion. Field tests were conducted as part of these soil surveys to determine whether soils were conductive and would lead to corrosion. Because corrosion is an electrochemical process, conductive soil is likely to lead to corrosion in water mains made of ferrous or copper materials. The existence of cathodic protection systems, such as those used to protect steel gas mains against corrosion, can lead to increased rates of corrosion for water distribution systems. The DIPRA study concluded that

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wrapping ductile iron pipe with a polywrap material would help protect the pipe against corrosion by providing a non-conductive barrier and by providing a barrier against the transfer of oxygen to the pipe.

As a benefit of the DIPRA study, the Company developed specifications for new installations that required the use of polywrap (or encasement of ductile iron pipe with a plastic barrier) in nearly all of its water systems. The plastic barrier limits oxygen transfer to the pipe material, thereby reducing the rates of corrosion. The Company even requires polywrap to be used on copper service lines in certain instances, based on the Company's experience with corrosive soil conditions in some of its water systems. These measures will help to prolong the life of infrastructure installed since 1986, when ductile iron was first used by the Company in its water systems. When the Company replaces aging pre-1986 infrastructure, it uses polywrap, as necessary, to maximize the useful life of the new infrastructure.

Additional environmental factors such as vegetation growth can also act to shorten the life of distribution systems. In downtown Coolidge, for example, the Company has replaced more than a mile of CA pipe due, in part, to the destructive effects of tamarack tree roots that have grown into the couplings of the mains and have caused the couplings to leak or fail. CA pipe accounts for forty-six percent (46%) of the water distribution system in the Pinal Valley water system.

Every water system has measurable system water losses. As pipes age, the frequency of water main and service line breaks and leaks increases. This observation was confirmed by an EPA research program titled "Aging Water Infrastructure Research Program" which found that the earliest sign of aging pipes is an increasing frequency of water main leaks. The condition of pipes degrades over time and, at some point, repairs alone are inadequate to reduce water losses. When reduction of system water losses through leak detection and repairs cannot reasonably keep pace with the increasing rate of leaks or breaks, the Company then needs to replace the water mains.

In Decision No. 71845, the Commission ordered the Company to reduce water loss in all of its systems to less than ten percent (10%) by July 2011. If it is not possible to comply with that standard by that date, the Company is required to submit a report demonstrating how it intends to reduce water losses to less than ten percent (10%). It is not possible for the Company to comply with that standard for all of its water systems and it will submit such a report to the Commission. The report will show that, absent a DSIC-type mechanism, it is unable to replace all of the infrastructure required to lower the water loss to meet the Commission's standard.

Economic Discussion

One of the important economic considerations that influences the Company's decision to invest in needed water distribution system improvements is the fact that replacement costs have increased dramatically over time. For example, in the Pinal Valley water system, nearly 14,000 feet of cast iron water mains were installed from 1921 to 1929. According to the Handy-

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Whitman engineering cost index (an index that tracks construction costs over time), the cost factor for a cast iron water main installed in 1921 is 27, while the cost factor for a cast iron water main installed in 2010 is 587. This means that the replacement cost for such a water main in 2010 is 22 times greater than the original installation cost ninety years ago in 1921. Even though this is a significant increase, the index does not consider the full increase in construction costs over time, as water main installation in the 1920s was much less complicated than it is today. For example, modern day excavation must take into account the multitude of competing underground infrastructures such as sewer, power, and gas lines, as well as fiber optic and data networks. It should also be noted that these water mains are in service and that service to customers must be maintained during the replacement project, which complicates the process and adds significant additional cost.

As part of its efforts to monitor and identify the sources and remedies for water loss, the Company conducted a detailed analysis of its Superstition, Pinal Valley, Bisbee and Oracle service areas and concluded that, based upon water main repair logs and the age of the distribution system, approximately 521,000 feet of water mains need to be replaced. Additionally, service line repair records show that approximately 9,820 failing plastic service lines and 8,321 services on failing water mains need to be replaced.⁸ The preliminary cost estimate for these much-needed utility plant replacements is over \$102 million, as shown in the table below:

QUANTITY	DESCRIPTION	ESTIMATED COST
40,379	Replace Failing Water Mains 1900 - 1909	\$ 2,826,530
22,712	Replace Failing Water Mains 1910 - 1919	1,587,818
29,737	Replace Failing Water Mains 1920 - 1929	1,780,750
61,590	Replace Failing Water Mains 1930 - 1939	4,019,164
324,647	Replace Failing Problematic Water Mains 1940 and later	16,545,154
41,838	Replace Failing Large Diameter Water Mains	5,221,060
8,321	Replace Services on Failing Water Mains	19,692,000
9,770	Replace Failing Plastic Services	25,287,500
Subtotal - Materials and Labor		\$ 76,959,976
Performance Bonds, Surveying, Right of Way Permitting, Testing, Field Inspection and Overhead		25,068,721
Estimated Cost of Construction		\$ 102,028,697

⁸ The first study titled "Water Loss Reduction Program for the Pinal Valley Service Area" is attached to Mr. Schneider's direct testimony in Docket W-01445A-10-0517 as Exhibit FKS-10. The second study titled "Water Loss Reduction Program for Water Systems in the Eastern Group" is an exhibit in the Company's Eastern Group rate case.

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It is significant that one of the key facts that led to the development of the ACRM was the magnitude of the approximately \$30 million the Company needed to invest in water treatment systems to remove arsenic from its public drinking water supplies. But that amount is \$72 million less than the estimated \$102 million capital cost needed for infrastructure replacement for the Superstition, Pinal Valley, Bisbee and Oracle systems.

When a utility is faced with a large capital project, its cost and construction timeline are usually known well in advance. With that knowledge, the utility can try to time its rate case filing to coincide with completion of the facility to minimize the amount of earnings erosion. In the case of the Company's infrastructure replacement program, funding a project of this size and magnitude would be a difficult if not impossible task, given the Company's capitalization (approximately \$150 million) and status as a privately-held entity. Assuming the Company was able to issue additional long-term debt to fund such a project, the traditional utility regulatory model would cause equity to erode at an unacceptable rate during the twelve to eighteen months it would take to conduct a general rate case.

The situation is further complicated by the fact that the Company's infrastructure replacement program is made up of many smaller projects that will be constructed every year for a number of years. Most of these projects would likely have a very short construction timeline, meaning that they would either not qualify for Allowance for Funds Used During Construction ("AFUDC"), or the amount of AFUDC recorded during the construction period would be nominal. Because these replacement programs do not increase sales, they will not generate additional revenues. In order to generate a financial return, the Company would be forced to file for annual general rate increases under the traditional rate case model, also resulting in erosion of earnings and equity. Such an erosion of the Company's equity balance would result in unsatisfactory financial ratios, the inability to issue short or long term debt and lead to higher costs for customers.

The DSIC discussed above was designed specifically to address this problem: it allows water providers to implement critical infrastructure replacement programs and recover the associated costs on a timely basis to ensure both the financial integrity of the utility and lower long-term average costs to customers.

DSIC Details

The Company proposes implementation of a DSIC under the following guidelines:

1. The DSIC would recover the fixed costs associated with DSIC-eligible utility plant additions, net of retirements placed in service between rate cases. Utility plant additions eligible for the DSIC would be limited to those additions net of retirements which are properly classified in the following NARUC Uniform System of Accounts for Class A and B Water Utilities (1976):

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- 343 Transmission and Distribution Mains
- 344 Fire Mains
- 345 Services
- 346 Meters
- 347 Meter Installations
- 348 Hydrants
- 398 Miscellaneous Equipment (Leak Detection Equipment)

2. The Company would file DSIC updates with the Commission on a semi-annual basis to reflect eligible utility plant placed in service during the six-month period ending two months prior to each DSIC update, as illustrated below:

Effective Date of Update	Period in Which DSIC-Eligible Plant Additions Made
July 1	November 1 – April 30
January 1	May 1 – October 31

3. The Company would file supporting data, as described below, for each semi-annual filing with the Commission at least 30 days prior to the effective date of the update:

Schedule 1: The Company's most recent balance sheet at the time of filing for a DSIC step increase.

Schedule 2: The Company's most recent income statement, including those systems for which the Company requests a DSIC step increase.

Schedule 3: An earnings test schedule for each system where the Company is requesting a DSIC step increase. The earnings test will reflect the Company's most recent financial data.

Schedule 4: A rate review schedule for each system showing the incremental and pro forma effects of the step increase associated with the eligible DSIC capital costs on the financial data provided in Schedules 2 and 3.

Schedule 5: A revenue requirement schedule showing the calculation of the required increase related to eligible DSIC capital costs for each system. The schedule would also indicate the current incremental increase, proposed monthly fixed basic service and volumetric charges for a customer with a 5/8" x 3/4" meter. The required rate of return, gross conversion factor and depreciation rate would be the same rates approved in that system's last rate case.

Schedule 6: A schedule showing the surcharge calculation for eligible DSIC capital costs for each system. Fifty percent (50%) of recoverable capital costs would be in the form of a monthly fixed surcharge, and fifty percent (50%) would be in the form of a volumetric surcharge. The monthly fixed surcharge would be scaled to each meter size, based on the

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approved 5/8" x 3/4" equivalent capacity ratio. This schedule would also provide information related to the number of customers by meter size and the number of gallons sold.

Schedule 7: A rate base schedule for each system showing the rate base determined in the most recent rate case, as well as the most recent rate base calculated as of the date of the information provided in Schedules 1 and 2, both adjusted to reflect the inclusion of completed and in-service eligible DSIC facilities.

Schedule 8: A Construction Work In Progress ledger showing monthly charges related to the construction of eligible DSIC facilities.

Schedule 9: A schedule showing the calculation of the Company's general plant allocation methodology.

Schedule 10: A typical bill analysis comparing bills for customers with a 5/8" x 3/4" meter under present and proposed rates.

4. The DSIC surcharge would be shown as a separate line item on each customer's bill. At least twice per year, the Company would be required to print a message on each customer's bill explaining the DSIC surcharge and indicating the progress made on replacing aging infrastructure.

5. The DSIC would be phased-in over time and capped at seven and one-half percent (7.5%) of the annual amount billed to customers under otherwise applicable rates and charges.

6. The DSIC would be reset to zero, as of the effective date of each new general rate case, by inclusion of the DSIC-eligible plant in rate base used to set base rates in the general rate case. Thereafter, new DSIC-eligible utility plant additions not included in the general rate case would form the basis for the new semi-annual DSIC filings. No DSIC filing would be made if, in any semi-annual period, the system for which the filing is made is earning a rate of return that exceeds the rate of return that would be used to calculate the revenue requirement under the DSIC.

Customer Benefits

Customer benefits associated with a DSIC include improved water quality, fire protection and public safety, increased water pressure, decreased water loss, reduced main breaks and fewer service interruptions. Additionally, implementation of a DSIC would help lead to rate stability, improve affordability and avoid large or sudden rate increases.

Failing distribution infrastructure often results in a number of customer service issues ranging from service interruptions for a single customer to larger problems involving service outages for hundreds of customers. Additionally, leaking water mains and service lines result in millions of gallons of treated water lost every year. While the Company's leak detection and

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repair program has made progress in reducing the amount of water lost to leaks and breaks, the distribution system replacement plan and the DSIC mechanism proposed here by the Company are practical ways to make real progress towards updating and improving integrity and reliability of the distribution system, as well as reducing customer outages caused by distribution system failures.

The National Regulatory Research Institute ("NRRI"), in its publication *Effective Regulation: Guidance for Public-Interest Decision Makers*, cited infrastructure replacement as posing several challenges for utilities and regulatory commissions, including how to finance infrastructure replacements such that rates increase gradually (as opposed to sudden spikes) while maintaining the utilities financial stability.⁹ Implementation of a DSIC would help meet those goals by providing the Company with the necessary financial means to invest in replacement of its aging infrastructure, and would allow it to make these investments in orderly, scheduled, incremental steps. Additionally, implementing a DSIC would mitigate the rate impact on customers by providing small, regular rate increases, rather than large, irregular increases that make customer affordability and acceptance more difficult.

Based on \$2.5 million of infrastructure to be replaced, the impact on a typical residential customer's monthly bill in the Pinal Valley water system would be \$0.87.¹⁰ Even at the maximum capped amount of seven and one-half percent (7.5%), the average monthly residential bill would not increase by more than \$2.58. In a recent ITT Value of Water Survey, nearly one in four American voters is "very concerned" about the state of the nation's water infrastructure and, when asked, two-thirds responded that they were willing to pay an average of \$6.20 more per month to upgrade water infrastructure.¹¹ While each customer may hold a different view of how much they would be willing to pay to replace infrastructure, it is interesting to note that, in this survey and the comments expressed by PPUC Commissioner Brownell, customers appear to support increased water rates for necessary infrastructure replacement.

Conclusion

Water distribution systems have a limited life and must eventually be replaced. The replacement of aging water system infrastructure, however, requires the replacement of all utility plant, whether funded initially by contributions, refundable advances, or utility investments. This single issue is a primary focus of discussions at the NARUC, the American Water Works Association, the ASCE, the EPA and other organizations. The scope of this issue is so large, in fact, that the capital investments identified by the EPA in a recent national survey shows that hundreds of billions of dollars in capital investments are needed to replace aging water system infrastructure in this country.

⁹ Exhibit H: *Effective Regulation: Guidance for Public-Interest Decision Makers* produced by the National Regulatory Research Institute

¹⁰ Exhibit I: *DSIC Revenue Requirement*

¹¹ Exhibit J: *ITT Corporation Value of Water Survey, Americans on the U.S. Water Crisis, 2010*

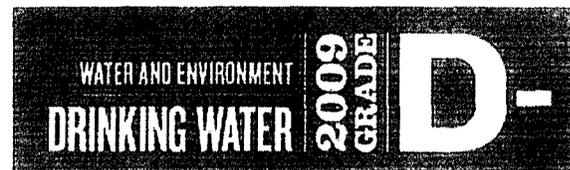
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In a detailed study focusing on its Superstition, Pinal Valley, Bisbee and Oracle service areas, the Company identified over \$102 million in critically needed water main and service line replacements. These replacements are needed to improve service reliability, increase pressure, decrease water losses and to enhance fire protection and public safety. The current rate structure will not allow for these critically needed investments. Battered in recent years by steep increases in debt and expenses, the Company has been unable to recover its cost of service for a number of years. In this type of financial environment, prudent management would lead the Company to slash its capital spending to the minimum, not to increase its capital spending. Yet, it is in this environment that the Company faces an order from the Commission to reduce its water losses, which requires replacement of aging water distribution infrastructure. Analyses conducted by the Company's engineering staff show that significant water main and service line replacements are immediately necessary for a number of its systems and, ultimately, for all of its systems, to ensure the integrity of the distribution system.

Even if it were possible for the Company to fund these much needed water distribution system replacements under traditional rate making, the resulting steep increases in customer rates could create a hardship for customers. A better way to achieve these goals is the adoption of the DSIC as outlined in this study. This would result in gradual increases in customers' bills without the impacts resulting from traditional ratemaking, while providing the Company a way to recover its cost of these investments in water distribution system improvements. Therefore, the Company urges the Commission to carefully consider the information presented in this study to develop a DSIC procedure as a ratemaking tool to address the urgent need for water distribution system replacements.

Report Card for American Infrastructure *produced by American Society of Civil Engineers*

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



Solutions

- Increase funding for water infrastructure system improvements and associated operations through a comprehensive federal program;
- Create a Water Infrastructure Trust Fund to finance the national shortfall in funding of infrastructure systems under the Clean Water Act and the Safe Drinking Water Act, including storm-water management and other projects designed to improve the nation's water quality;
- Employ a range of financing mechanisms, such as appropriations from general treasury funds, issuance of revenue bonds and tax exempt financing at state and local levels, public-private partnerships, state infrastructure banks, and user fees on certain consumer products as well as innovative financing mechanisms, including broad-based environmental restoration taxes to address problems associated with water pollution, wastewater management and treatment, and storm-water management.

Conditions

The nation's drinking-water systems face staggering public investment needs over the next 20 years. Although America spends billions on infrastructure each year, drinking water systems face an annual shortfall of at least \$11 billion in funding needed to replace aging facilities that are near the end of their useful life and to comply with existing and future federal water regulations. The shortfall does not account for any growth in the demand for drinking water over the next 20 [tip:years.=Fix that leak!

A faucet dripping just once per second will waste as much as 2,700 gallons of water per year. Fix any leaking faucets.]

Of the nearly 53,000 community water systems, approximately 83% serve 3,300 or fewer people. These systems provide water to just 9% of the total U.S. population served by all community systems. In contrast, 8% of community water systems serve more than 10,000 people and provide water to 81% of the population served. Eighty-five percent (16,348) of nontransient, noncommunity water systems and 97% (83,351) of transient noncommunity water systems serve 500 or fewer people. These smaller systems face huge financial, technological, and managerial challenges in meeting a growing number of federal drinking-water regulations.

In 2002, the U.S. Environmental Protection Agency (EPA) issued The Clean Water and Drinking Water Infrastructure Gap Analysis, which identified potential funding gaps between projected needs and spending from 2000 through 2019. This analysis estimated a potential 20-year funding gap for drinking water capital expenditures as well as operations and maintenance, ranging from \$45 billion to \$263 billion, depending on spending levels. Capital needs alone were pegged at \$161 billion.

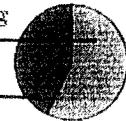
The Congressional Budget Office (CBO) concluded in 2003 that "current funding from all levels of government and current revenues generated from ratepayers will not be sufficient to meet the nation's future demand for water infrastructure." The CBO estimated the nation's needs for drinking water investments at between \$10 billion and \$20 billion over the next 20 years.

ESTIMATED 5-YEAR FUNDING REQUIREMENTS FOR DRINKING WATER AND WASTEWATER

Total investment needs
\$255 BILLION

Estimated spending
\$146.4 BILLION

Projected shortfall
\$108.6 BILLION



Case Studies



LOUISVILLE, KENTUCKY

[American Recovery and Reinvestment Act Funding](#) ([/case-study/american-recovery-and-reinvestment-act-funding](#))

PORT ANGELES, WASHINGTON

[Downtown Water Main Project](#) ([/case-study/downtown-water-main-project](#))

ORANGE COUNTY, CALIFORNIA

[Groundwater Replenishment System](#) ([/case-study/groundwater-replenishment-system](#))

In 1996, Congress enacted the drinking-water state revolving loan fund (SRF) program. The program authorizes the EPA to award annual capitalization grants to states. States then use their grants (plus a 20% state match) to provide loans and other assistance to public water systems. Communities repay loans into the fund, thus replenishing the fund and making resources available for projects in other communities. Eligible projects include installation and replacement of treatment facilities, distribution systems, and some storage facilities. Projects to replace aging infrastructure are eligible if they are needed to maintain compliance or to further public health protection goals.

Federal assistance has not kept pace with demand, however. Between FY 1997 and FY 2008, Congress appropriated approximately \$9.5 billion for the SRF. This 11-year total is only slightly more than the annual capital investment gap for each of those years as calculated by the EPA in 2002.

Design Life of Drinking Water Systems

COMPONENTS	YEARS OF DESIGN LIFE
Reservoirs and Dams	50-80
Treatment Plants—Concrete Structures	60-70
Treatment Plants—Mechanical and Electrical	15-25
Trunk Mains	65-95
Pumping Stations—Concrete Structures	60-70
Pumping Stations—Mechanical and Electrical	25
Distribution	60-95

SOURCE US EPA Clean Water and Drinking Water Infrastructure Gap Analysis Report, September 2002

Water Usage: 1950 and 2000

	1950	2000	PERCENT CHANGE
Population (Millions)	93.4	242	159%
Usage (Billions of Gallons per Day)	14	43	207%
Per Capita Usage (Gallons per Person per Day)	149	179	20%

SOURCE US EPA Clean Water and Drinking Water Infrastructure Gap Analysis Report, September 2002

Resilience

Drinking water systems provide a critical public health function and are essential to life, economic development, and growth. Disruptions in service can hinder disaster response and recovery efforts, expose the public to water-borne contaminants, and cause damage to roadways, structures, and other infrastructure, endangering lives and resulting in billions of dollars in losses.

The nation's drinking-water systems are not highly resilient; present capabilities to prevent failure and properly maintain or reconstitute services are inadequate. Additionally, the lack of investment and the interdependence on the energy sector contribute to the lack of overall

system resilience. These shortcomings are currently being addressed through the construction of dedicated emergency power generation at key drinking water utility facilities, increased connections with adjacent utilities for emergency supply, and the development of security and criticality criteria. Investment prioritization must take into consideration system vulnerabilities, interdependencies, improved efficiencies in water usage via market incentives, system robustness, redundancy, failure consequences, and ease and cost of recovery.

Conclusion

The nation's drinking-water systems face staggering public investment needs over the next 20 years. Although America spends billions on infrastructure each year, drinking water systems face an annual shortfall of at least \$11 billion in funding needed to replace aging facilities that are near the end of their useful life and to comply with existing and future federal water regulations. The shortfall does not account for any growth in the demand for drinking water over the next 20 years.

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Federal assistance has not kept pace with demand, however. Between FY 1997 and FY 2008, Congress appropriated approximately \$9.5 billion for the SRF. This 11-year total is only slightly more than the annual capital investment gap for each of those years as calculated by the EPA in 2002.

Sources

1. Congressional Research Service, *Safe Drinking Water Act: Selected Regulatory and Legislative Issues*, April 2008.
2. U.S. Environmental Protection Agency, *The Clean Water and Drinking Water Infrastructure Gap Analysis*, September 2002.
3. U.S. Congressional Budget Office, *Future Investment in Drinking Water and Wastewater Infrastructure*, May 2002.
4. G. Tracy Mehan, *Testimony before the Subcommittee on Water Resources and Environment*, U.S. House Transportation and Infrastructure Committee, February 2009.

Report Card for American Infrastructure *produced by American Society of Civil Engineers*

Arizona

Top Three Infrastructure Concerns:



1. Roads
2. Drinking Water
3. Mass Transit

Key Infrastructure Facts

[Arizona Transportation Report Card - 2004](#)

http://www.azsce.org/downloads/AZSCE_2004_Infrastructure_Report_Card_f3.pdf

- 12% of Arizona's bridges are structurally deficient or functionally obsolete.
- There are 96 high hazard dams in Arizona. A high hazard dam is defined as a dam whose failure would cause a loss of life and significant property damage.
- 43 of Arizona's 248 dams are in need of rehabilitation to meet applicable state dam safety standards.
- 29% of high hazard dams in Arizona have no emergency action plan (EAP). An EAP is a predetermined plan of action to be taken including roles, responsibilities and procedures for surveillance, notification and evacuation to reduce the potential for loss of life and property damage in an area affected by a failure or mis-operation of a dam.
- Arizona's drinking water infrastructure needs an investment of \$9.12 billion over the next 20 years.
- Arizona ranked 33rd in the quantity of hazardous waste produced and 27th in the total number of hazardous waste producers.
- Arizona reported an unmet need of \$8.6 million for its state public outdoor recreation facilities and parkland acquisition.
- 21% of Arizona's roads are in poor or mediocre condition.
- 41% of Arizona's major urban highways are congested.
- Vehicle travel on Arizona's highways increased by 78% from 1990 to 2007.
- Arizona has \$4.57 billion in wastewater infrastructure needs.

Sources

*Survey of the state's ASCE members conducted in September 2008

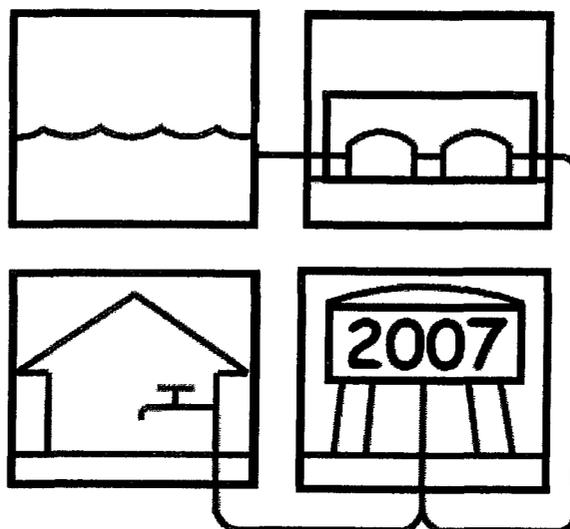
- Deficient Bridge Report, Federal Highway Administration, 2008.
- National Inventory of Dams, U.S. Army Corps of Engineers, 2008.
- Drinking Water Needs Survey and Assessment, Environmental Protection Agency, 2003.
- National Biennial RCRA Hazardous Waste Report, Environmental Protection Agency, 2007.
- The U.S. Waterway System – Transportation Facts, Navigation Data Center, U.S Army Corps of Engineers, February 2007.
- 2007 Annual Report, Land and Water Conservation Fund State Assistance Program, National Park Service.
- TRIP Fact Sheet, March 2009.
- Clean Water Needs Survey, Environmental Protection Agency, 2004.

See Your State's Grade

- [Alabama \(/state-page/alabama\)](#)
- [Alaska \(/state-page/alaska\)](#)
- [Arizona \(/state-page/arizona\)](#)
- [Arkansas \(/state-page/arkansas\)](#)
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- [Virginia \(/state-page/virginia\)](#)

Drinking Water Infrastructure Needs Survey and Assessment

Fourth Report to Congress



**U.S. Environmental Protection Agency
Office of Water
Office of Ground Water and Drinking Water
Drinking Water Protection Division
Washington, D.C. 20460**

2007 Drinking Water Infrastructure Needs Survey and Assessment

Exhibit 2.1: State 20-Year Need Reported by Project Type (in millions of January 2007 dollars)

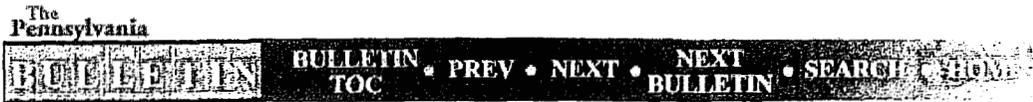
State	Transmission/ Distribution	Source	Treatment	Storage	Other	Total
Alabama	\$3,343.9	\$71.6	\$386.5	\$285.3	\$12.0	\$4,099.4
Alaska	\$478.2	\$56.4	\$121.3	\$150.0	\$6.5	\$812.4
Arizona	\$3,819.0	\$460.3	\$2,150.2	\$900.1	\$81.1	\$7,410.7
Arkansas	\$3,667.5	\$149.3	\$966.0	\$478.3	\$17.4	\$5,278.5
California	\$22,988.5	\$2,515.3	\$7,549.7	\$5,735.6	\$257.3	\$39,046.3
Colorado	\$3,156.7	\$371.7	\$2,150.2	\$696.7	\$24.8	\$6,400.1
Connecticut	\$807.1	\$134.9	\$280.6	\$151.6	\$19.7	\$1,394.0
District of Columbia	\$836.8	\$0.0	\$0.4	\$35.5	\$1.5	\$874.2
Florida	\$7,234.9	\$887.3	\$3,552.1	\$975.4	\$173.5	\$12,823.1
Georgia	\$6,295.6	\$406.2	\$1,390.5	\$751.5	\$93.9	\$8,937.7
Illinois	\$8,982.0	\$1,576.3	\$2,907.8	\$1,386.7	\$164.2	\$15,017.1
Indiana	\$3,814.2	\$353.8	\$1,096.1	\$648.5	\$31.8	\$5,944.4
Iowa	\$4,356.8	\$271.9	\$990.8	\$467.2	\$26.4	\$6,113.1
Kansas	\$2,784.4	\$187.1	\$684.1	\$339.7	\$35.0	\$4,030.2
Kentucky	\$3,643.6	\$121.7	\$699.0	\$474.8	\$38.9	\$4,978.1
Louisiana	\$5,100.7	\$305.7	\$1,024.8	\$427.4	\$41.3	\$6,900.1
Maryland	\$3,497.6	\$180.6	\$1,134.5	\$606.0	\$24.7	\$5,443.4
Massachusetts	\$4,456.4	\$340.9	\$1,130.1	\$823.4	\$39.1	\$6,790.0
Michigan	\$7,657.6	\$529.6	\$2,548.5	\$1,035.8	\$71.3	\$11,842.8
Minnesota	\$2,819.3	\$372.0	\$1,982.9	\$770.3	\$43.9	\$5,988.4
Mississippi	\$1,604.4	\$284.7	\$907.2	\$429.8	\$17.2	\$3,243.3
Missouri	\$4,801.8	\$324.7	\$1,281.2	\$635.7	\$42.3	\$7,085.6
Nebraska	\$1,017.7	\$140.5	\$309.2	\$300.8	\$8.4	\$1,776.6
Nevada	\$1,116.4	\$892.3	\$202.2	\$460.6	\$19.8	\$2,691.3
New Jersey	\$4,722.9	\$307.1	\$1,850.4	\$1,056.7	\$24.7	\$7,961.6
New York	\$15,417.0	\$1,915.5	\$6,986.2	\$2,707.8	\$110.9	\$27,137.3
North Carolina	\$6,037.1	\$670.7	\$2,237.7	\$1,032.7	\$77.1	\$10,055.2
Ohio	\$8,374.2	\$564.2	\$2,235.6	\$1,330.4	\$94.6	\$12,599.0
Oklahoma	\$2,603.5	\$142.0	\$858.9	\$493.5	\$14.1	\$4,112.1
Oregon	\$1,520.6	\$156.3	\$546.1	\$536.0	\$26.2	\$2,785.3
Pennsylvania	\$7,644.9	\$557.1	\$1,834.5	\$1,284.2	\$58.7	\$11,379.3
Puerto Rico	\$1,079.5	\$80.6	\$1,037.4	\$325.2	\$14.8	\$2,537.5
South Carolina	\$1,102.7	\$75.2	\$222.3	\$210.2	\$17.9	\$1,628.3
Tennessee	\$2,356.3	\$109.2	\$692.8	\$368.0	\$21.2	\$3,547.6
Texas	\$15,950.2	\$1,600.3	\$5,785.2	\$2,695.8	\$99.2	\$26,130.8
Virginia	\$3,806.3	\$196.0	\$1,293.3	\$722.8	\$43.6	\$6,061.9
Washington	\$5,765.5	\$717.3	\$1,580.0	\$1,502.7	\$190.6	\$9,756.0
Wisconsin	\$3,550.5	\$385.1	\$1,467.5	\$758.7	\$24.2	\$6,186.0
Partially Surveyed States*	\$10,478.1	\$1,131.1	\$3,347.3	\$2,099.5	\$136.3	\$17,192.4
Subtotal	\$198,690.3	\$19,542.3	\$67,421.3	\$36,091.3	\$2,246.3	\$323,991.4
American Samoa	\$43.7	\$10.6	\$15.9	\$22.0	\$0.6	\$92.8
Guam	\$223.6	\$2.0	\$8.6	\$29.7	\$0.0	\$263.9
Commonwealth of the Northern Mariana Islands	\$123.2	\$28.7	\$61.8	\$65.8	\$9.7	\$289.3
U.S. Virgin Islands	\$138.3	\$7.1	\$45.9	\$59.8	\$2.3	\$253.3
Subtotal	\$528.8	\$48.4	\$132.2	\$177.2	\$12.7	\$899.4
Total State Need	\$199,219.1	\$19,590.7	\$67,553.5	\$36,268.5	\$2,259.0	\$324,890.8

* For the 2007 DWINSAs the need for states that opt out of the medium system portion of the survey is presented cumulatively and not by state. The list of the 14 partially surveyed states can be seen in Exhibit 2.4.

Exhibit 2.2: State 20-Year Need Reported by System Size (in millions of January 2007 dollars)

State	Large	Medium	Small	NPNCWS	Total
Alabama	\$998.5	\$2,709.8	\$387.2	\$3.8	\$4,099.4
Alaska	\$85.1	\$302.3	\$363.8	\$61.1	\$812.4
Arizona	\$4,381.4	\$2,121.3	\$889.4	\$18.5	\$7,410.7
Arkansas	\$443.6	\$3,854.3	\$973.3	\$7.3	\$5,278.5
California	\$21,345.9	\$14,098.1	\$3,500.9	\$101.4	\$39,046.3
Colorado	\$2,079.0	\$3,246.6	\$1,073.2	\$1.3	\$6,400.1
Connecticut	\$288.3	\$451.2	\$627.0	\$27.5	\$1,394.0
District of Columbia	\$874.2	\$0.0	\$0.0	\$0.0	\$874.2
Florida	\$5,135.7	\$5,769.3	\$1,790.4	\$127.7	\$12,823.1
Georgia	\$2,663.4	\$4,716.0	\$1,544.5	\$13.8	\$8,937.7
Illinois	\$5,248.1	\$7,006.7	\$2,652.2	\$110.2	\$15,017.1
Indiana	\$1,417.2	\$3,291.0	\$1,059.9	\$176.3	\$5,944.4
Iowa	\$458.2	\$4,190.3	\$1,446.2	\$18.4	\$6,113.1
Kansas	\$766.5	\$2,017.8	\$1,242.3	\$3.5	\$4,030.2
Kentucky	\$757.5	\$3,879.0	\$340.5	\$1.1	\$4,978.1
Louisiana	\$3,354.7	\$2,249.4	\$1,281.0	\$14.9	\$6,900.1
Maryland	\$3,924.1	\$853.3	\$567.8	\$98.2	\$5,443.4
Massachusetts	\$1,683.3	\$4,649.7	\$424.0	\$32.9	\$6,790.0
Michigan	\$4,952.6	\$4,677.0	\$1,740.9	\$472.2	\$11,842.8
Minnesota	\$672.0	\$3,631.7	\$1,416.5	\$268.3	\$5,988.4
Mississippi	\$227.0	\$1,432.2	\$1,574.5	\$9.6	\$3,243.3
Missouri	\$1,342.2	\$3,860.3	\$1,844.0	\$39.1	\$7,085.6
Nebraska	\$379.0	\$632.2	\$749.4	\$16.0	\$1,776.6
Nevada	\$2,098.2	\$291.2	\$287.7	\$14.2	\$2,691.3
New Jersey	\$3,636.5	\$3,502.2	\$619.4	\$203.6	\$7,961.6
New York	\$17,956.6	\$5,434.9	\$3,619.7	\$126.2	\$27,137.3
North Carolina	\$3,043.9	\$4,907.5	\$1,734.1	\$369.7	\$10,055.2
Ohio	\$3,172.1	\$7,449.7	\$1,695.0	\$282.2	\$12,599.0
Oklahoma	\$714.8	\$1,917.2	\$1,457.9	\$22.3	\$4,112.1
Oregon	\$674.2	\$958.2	\$1,097.3	\$55.6	\$2,785.3
Pennsylvania	\$3,950.8	\$4,542.2	\$2,604.6	\$281.8	\$11,379.3
Puerto Rico	\$823.6	\$1,109.4	\$603.3	\$1.2	\$2,537.5
South Carolina	\$295.4	\$806.1	\$510.6	\$16.2	\$1,628.3
Tennessee	\$555.8	\$2,224.9	\$738.1	\$28.8	\$3,547.6
Texas	\$7,614.8	\$13,376.3	\$5,091.9	\$47.7	\$26,130.8
Virginia	\$2,474.4	\$2,216.5	\$1,279.4	\$91.7	\$6,061.9
Washington	\$2,686.7	\$4,586.7	\$2,366.6	\$116.1	\$9,756.0
Wisconsin	\$1,299.2	\$3,074.9	\$1,328.4	\$483.5	\$6,186.0
Partially Surveyed States*	\$1,664.1	\$8,537.0	\$6,686.7	\$304.5	\$17,192.4
Subtotal	\$116,139.0	\$144,574.7	\$59,209.6	\$4,068.2	\$323,991.4
American Samoa	\$0.0	\$59.5	\$33.3	\$0.0	\$92.8
Guam	\$203.1	\$60.8	\$0.0	\$0.0	\$263.9
Commonwealth of the Northern Mariana Islands	\$0.0	\$158.6	\$130.6	\$0.0	\$289.3
U.S. Virgin Islands	\$0.0	\$197.4	\$55.9	\$0.0	\$253.3
Subtotal	\$203.1	\$476.4	\$219.9	\$0.0	\$899.4
Total State Need	\$116,342.1	\$145,051.1	\$59,429.5	\$4,068.2	\$324,890.8

* For the 2007 DWNSA the need for states that opt out of the medium system portion of the survey is presented cumulatively and not by state. The list of the 14 partially surveyed states can be seen in Exhibit 2.4.



NOTICES

Petition of Philadelphia Suburban Water Company for Approval to Implement a Tariff Supplement Establishing a Distribution System Improvement Charge; Doc. No. P-00961036

[26 Pa.B. 4490]

Commissioners Present: John M. Quain, Chairperson; Lisa Crutchfield, Vice Chairperson; John Hanger; Robert K. Bloom

Public meeting held
August 22, 1996

Opinion and Order

By the Commission:

I. Background

On March 20, 1996, the Philadelphia Suburban Water Company (PSWC or company) filed the above-referenced petition with this Commission requesting regulatory approval to file and implement an automatic adjustment clause tariff that would establish a Distribution System Improvement Charge (DSIC or surcharge) under section 1307(a) of the Public Utility Code. 66 Pa.C.S. § 1307(a). Section 1307 (a) provides statutory authority for a utility to establish, subject to Commission review and approval, a tariffed automatic adjustment clause mechanism designed to provide "a just and reasonable return on the rate base" of the public utility.

As proposed by PSWC, the DSIC would operate to recover the fixed costs (depreciation and pre-tax return) of certain nonrevenue producing, nonexpense reducing infrastructure rehabilitation projects completed and placed in service between section 1308 base rate cases. The company maintains that the property additions eligible for the DSIC will be limited to revenue neutral infrastructure projects, consisting principally of replacement investments in so-called "mass property" accounts. The DSIC is designed to provide the company with the resources it needs to accelerate its investment in new utility plant to replace aging water distribution infrastructure, facilitating compliance with evolving regulatory requirements imposed by the Safe Drinking Water Act (SDWA) and the implementation of solutions to regional water supply problems.

To illustrate its point, the company states that it has 3,180 miles of mains, that it is currently rehabilitating approximately 15 miles of main each year, and that, at that pace, it would require approximately 212 years to make all of the needed improvements to existing facilities. The company also states that water service, more than any other utility service, is critical to maintaining public health as water is "a necessity of life and vital for public fire protection services." Petition at 3.

The company alleges that the DSIC may enable it to break out of a cycle, imposed on it by its capital investment needs, of filing base rate relief every 15 months. Any reduction in rate case filing frequency would generate costs savings which would inure to the benefit of customers and the Commission. In its petition, the company proposes certain accounts for recovery, time-frames and other procedures to be followed in implementing the DSIC. The details of those procedures will be discussed below.

To begin with, the company proposes that the DSIC become effective for service rendered on and after July 1, 1996. The company also proposes that the initial charge to be calculated would recover the fixed costs of eligible plant additions that have not previously been reflected in the company's rate base and will have been placed in service between January 1, 1996 and May 31, 1996. Thereafter, the company proposes to update the DSIC on a quarterly basis to reflect eligible plant additions placed in service during the 3-month periods ending 1 month prior to the effective date of each DSIC update. Petition at 3-4.

The company also proposes that the DSIC be capped at 5% of the amount billed to customers under otherwise applicable rates and charges, exclusive of amounts recovered under the State Tax Adjustment Surcharge (STAS). If the cap is reached, the company would not seek any additional increases. Petition at 4.

As with any section 1307 automatic adjustment clause, the DSIC will be subject to an annual reconciliation, whereby the revenue received under the DSIC for the reconciliation period will be compared to the Company's eligible costs for that period. The difference between such revenues and costs will be recouped or refunded to customers, as appropriate, in accordance with section 1307(e). Petition at 5.

Lastly, in terms of procedures, the company proposes that the DSIC will be reset to zero as of the effective date of new section 1308 base rates that provide for prospective recovery of the annual costs that had previously been recovered under the DSIC. Petition at 5. And to avoid over recovery of costs in the absence of a base rate case, the company also proposed that the DSIC will be reset to zero if, in any quarter, data filed with the Commission in the company's then most recent Annual or Quarterly Earnings Report shows that the company will earn a rate of return that would exceed the rate of return used to calculate its fixed costs under the DSIC. Petition at 5.

In terms of the legal issues raised by its petition, the company also states that its proposed automatic adjustment clause and procedures are lawful for a number of reasons found in statutory and case law. With regard to statutory law, PSWC states that section 1307(a) of the Public Utility Code, 66 Pa.C.S. § 1307(a), provides that a company may establish a sliding scale of rates or such other method for the automatic adjustment of the rates to recover a variety of costs. Petition at 19. Moreover, the company has cited circumstances in which the Commission has authorized the use of section 1307(a) automatic adjustment clauses to recover a wide array of expenses, depreciation and capital costs. See *Pennsylvania Industrial Energy Coalition v. Pa. P.U.C.*, 653 A.2d 1336 (Pa. Cmwlth. 1995) (PIEC) (recovery of electric utilities' demand-side management costs); 52 Pa. Code § 69.181 (recovery of gas utilities' take or pay liabilities to pipeline suppliers); 52 Pa. Code § 69.341(b) (recovery of gas utilities' gas supply realignment costs and stranded costs resulting from Federal Energy Regulatory Commission Order 636); and 52 Pa. Code § 69.353 (recovery of water utilities' principal and interest due on PennVEST obligations). Petition at 20-21.

Answers were filed by the Office of Trial Staff (OTS) (Answer filed April 9, 1996), the Office of Small Business Advocate (OSBA) (Answer filed May 3, 1996) and the Office of Consumer Advocate (OCA) (Comments and testimony filed May 6, 1996). Protests to the petition were also filed by many individual customers.

In its answer, the OTS requests that the Commission deny the company's petition based on legal and technical grounds. With regard to the legal objections, the OTS argues that, since the facilities are "new" facilities, the company is attempting to circumvent a base rate review through the use of a surcharge, in violation of the Court's decision in *PIEC*.

The OSBA's answer did not submit legal arguments opposing the implementation of the DSIC. Rather, the OSBA has requested that the Commission conduct a thorough investigation regarding the reasonableness and lawfulness of the proposed tariff supplement as they affect the company's various customer classes.

In its comments, the OCA argues against the implementation of the DSIC alleging that the company

does not need the DSIC mechanism and that implementation of a DSIC mechanism would provide in excess of a fair return to the company. With regard to legal arguments, OCA challenges the legality of the surcharge based upon the same arguments outlined in OTS' answer based on its interpretation of section 1307(a) and the *PIEC* decision.

On May 30, 1996, the company filed a reply with the Commission addressing the comments raised in the answers filed by OTS, OSBA and OCA. The OCA then filed a response to this reply on June 19, 1996. In PSWC's reply to the various parties concerning the legality of the DSIC, the company continued to support the legality of a surcharge under section 1307(a) of the Public Utility Code and the Commonwealth Court decision in *PIEC*, and supplied rebuttal arguments in support of its need for the DSIC and the legality of its proposal.

II. Discussion

At the outset of this discussion regarding the PSWC petition, we believe it necessary to clarify the Commission's view of the scope of this proceeding and the nature of the PSWC proposal. Because the PSWC petition requests regulatory approval to file and implement a certain type of automatic adjustment clause, we will not address, in this order, the specific factual issues that may be raised by the proposed tariff supplement submitted as Exhibit A to the petition. The Commission views the tariff supplement in Exhibit A as no more than the company's proposal as to how such an automatic adjustment clause should be structured. Indeed, as explained below, the specific tariff supplement proposed by PSWC will not be approved by this order.

Therefore, to the extent that parties have objections and/or complaints to the rates to be charged by means of an automatic adjustment clause that provides for the recovery of a water company's infrastructure improvement costs, those objections and/or complaints would be appropriately addressed to an actual PSWC tariff filing that contains specific rates to be charged to consumers based on specific distribution system improvement expenditures. A section 701 complaint would be the appropriate procedural vehicle to challenge such a tariff filing and, provided that factual issues are raised, the filing of such a complaint will entitle the complainant to a hearing before an administrative law judge and an adjudication of the complaint.

Thus, the key issues raised by the PSWC petition, and to be resolved in this order, are generic threshold issues regarding (1) the legality of the type of automatic adjustment clause proposed by the company and (2) the appropriate general structure of such an automatic adjustment clause that conforms to the requirement of the statute and Pennsylvania case law. In other words, this proceeding will address the legal issue concerning the adoption of the surcharge under section 1307(a) of the Code. In addition, the Commission will outline the general parameters of a surcharge mechanism that meets the requirement of the statute, that is consistent with the case law, that has adequate safeguards to protect consumers' interests and, therefore, constitutes a surcharge that is likely to receive regulatory approval when filed.

To begin with, we applaud companies who present this Commission with innovative ideas to address recurring problems for their respective industries. In the water industry, companies are faced with the dual tasks of improving the quality of the water delivered to customers due to the new mandates of the SDWA and other governmental requirements and, at the same time, maintaining an aging water utility infrastructure. We recognize that, in recent years, PSWC and other Pennsylvania water companies have been required to make significant investments in new utility plant for projects such as the filtration of surface water supplies, the replacement of aging water distribution plant and the implementation of meter replacement programs. **In addition, water companies face the daunting challenge of rehabilitating their existing distribution infrastructure before the property reaches the end of its service life to avoid serious public health and safety risks.**

In the Commission's judgment, the establishment of a DSIC along the lines proposed by PSWC can substantially aid the water company in meeting these challenges on behalf of the water consuming public. We agree with the company that the establishment of a DSIC would enable the company to address, in an orderly and comprehensive manner, the problems presented by its aging water distribution

system, and would have a direct and positive effect upon water quality, water pressure and service reliability. For these reasons, we endorse the concept of using an automatic adjustment clause to address this regulatory problem for the water industry in Pennsylvania and, in particular, the type of DSIC proposed by PSWC.

A. Legal Issues

In Pennsylvania, utility costs are recovered from customers through section 1308 base rates and through section 1307 automatic adjustment clauses. The purpose of a section 1307 automatic adjustment clause is to provide an automatic mechanism enabling utilities to recover specific costs not covered by general rates. *Allegheny Ludlum Steel Corporation v. Pa. P.U.C.* 501 Pa. 71, 75 n.3, 459 A.2d 1218, 1220 n.3 (1983). Moreover, section 1307(e), 66 Pa.C.S. § 1307(e), provides that the automatic adjustment clause procedures shall include an annual report detailing the revenues collected and the expenses incurred under the automatic adjustment clause, followed by a public hearing to reconcile the amounts and to determine any refunds owed to customers or additional recovery due from customers.

Until recently, an automatic adjustment clause has usually been applied only to gas and electric companies. However, the Commission has provided for the recovery of capital costs in at least one instance to date, i.e., for PECO Energy's costs to convert oil-fired units to units which burn natural gas. *Philadelphia Electric Co. ECR No. 3*, Docket No. M-00920312 (Order adopted April 1, 1993). The Commission has also adopted a policy statement which encourages water companies to seek section 1307(a) cost recovery for their PENNVEST debt costs, 52 Pa. Code § 69.361, and policy statements approving section 1307 cost recovery for certain FERC Order 636 stranded costs, 52 Pa. Code § 69.341 (b)(4), and electric utility coal uprating costs, 52 Pa. Code § 57.124(a). Moreover, since 1970, the Commission has authorized all utilities to use an automatic adjustment clause mechanism to recover certain incremental changes in State tax rates. 52 Pa. Code § 69.44.

Pennsylvania case law regarding the permissible scope of section 1307 cost recovery, while not extensive, supports a broad interpretation of that section. In *National Fuel Gas Distribution Corp. v. Pa. P.U.C.*, 473 A.2d 1109, 1121 (Pa. Cmwlth. 1984), the Commonwealth Court held that the purpose of section 1307 of the code is to permit reflection in customer charges of changes in one component of a utility's cost of providing public service without the necessity of the "broad, costly and time-consuming inquiry" required in a section 1308 base rate case. Moreover, under the 1995 *PIEC* decision, the Commonwealth Court adopted the Commission's legal position that its use of section 1307 was not limited to fuel and purchased power costs. At the same time, the Commonwealth Court cautioned that section 1307 should have limited application and should not override the traditional ratemaking process. *PIEC* at 1349. In determining whether DSM costs could be recovered through the section 1307 mechanism, the Court wrote:

Although we agree that Section 1307 should have limited application and the PUC should not use it to disassemble the traditional rate-making process, *the General Assembly did not limit the allowance of automatic adjustment to only fuel costs and taxes which are generally beyond the control of the utility. Instead, the General Assembly specifically allowed the recovery of fuel costs and also allowed the PUC or the utilities to initiate the automatic adjustment of costs within specific procedures . . .* In this case, Section 1319 of the Code specifically states that all prudent and reasonable costs should be recovered and sets forth requirements that the proposed programs be determined to be "prudent and cost-effective" by the PUC (or the Bureau of Conservation, Economics and Energy Planning as designated by the PUC), before any costs may be recovered through the surcharge mechanism.

PIEC at 1349 (emphasis added). The Court then concluded that the recovery of DSM costs under section 1307 was lawful because the language of section 1307 gives the Commission discretion to establish automatic adjustment clauses for the recovery of prudently incurred costs, and because in section 1319 the legislature specifically identified and provided for the recovery of prudent and reasonable costs for developing DSM programs.

Clearly, the Court in *PIEC* recognized the importance of the statute (section 1319) in providing for the

recovery of development costs of the DSM programs via section 1307. However, the Court also recognized that the language of section 1307 is not limited to a narrow set of costs (as advocated by the industrials), that whether the costs at issue should be recovered via an automatic adjustment clause is a matter of Commission discretion, and that the court "is not free to substitute its discretion for the discretion properly exercised by the PUC in establishing the surcharge method." *PIEC* at 1349.

Turning to the PSWC proposal to file and implement an automatic adjustment clause to recover its distribution system improvement costs, we find that the proposal is appropriately limited and narrowly tailored to recover a specific category of utility costs--the incremental fixed costs (depreciation and pre-tax return) associated with nonrevenue producing, nonexpense reducing distribution system improvement projects completed and placed in service between base rate cases. Recovery of this narrow set of costs is clearly permitted under section 1307(a) (which has no cost category limitation in its language) and Pennsylvania case law; and, in the Commission's judgment, this proposal is in no way a mechanism to "disassemble" the traditional ratemaking process for several reasons: first, the DSIC is designed to identify and recover the distribution system improvement costs incurred between rate cases; second, the costs to be recovered represent a narrow subset of the company's total cost of service; and third, the DSIC amount will be capped at a relatively low level to prevent any long-term evasion of a base rate review of these plant costs. Indeed, the company's proposal recognizes that there will be a full review of these costs in a subsequent section 1308 base rate proceeding. We also note that the DSIC is designed to reflect only the costs of the eligible plant additions that are actually placed in service during the 3-month periods ending 1 month prior to the effective date of each surcharge update; this key provision serves to avoid any potential violation of section 1315 and this State's long-standing "used and useful" rule.

Additionally, we find that sections 1307(d) and (e) provide broad auditing powers to the Commission and a formal reconciliation mechanism to carefully monitor the operation of such a surcharge. While admittedly section 1307(d) is addressed to fuel cost adjustment audits, we do not view the Commission's auditing power over automatic adjustment clauses as limited to only fuel costs, given the broad auditing and investigative powers granted to the Commission via sections 504, 505, 506, and 516 of the Public Utility Code. 66 Pa.C.S. §§ 504, 505, 506, 516. Nor would we be likely to approve a utility's request for approval of an automatic adjustment clause in the absence of its complete agreement that the Commission has such auditing powers. Moreover, section 1307(e) provides for a mandatory annual reconciliation report regarding the revenues and expenses recovered via an automatic adjustment clause and a "public hearing on the substance of the report and any matters pertaining to the use by such public utility" of the automatic adjustment clause. As such, the costs to be recovered via the company's DSIC proposal will be subject to the Commission's auditing powers, an annual reconciliation report and public hearings.

B. General Tariff Parameters

The basic elements of a tariff supplement to implement a lawful DSIC mechanism include a statement of purpose and description of eligible property, a specification of its effective date and the dates of its subsequent quarterly updates, details regarding the computation methodology and appropriate consumer safeguards. The proposed tariff supplement included with the PSWC petition, as Exhibit A, includes most of these elements but, in the Commission's judgment, certain elements should be modified in order to adequately protect consumer interests and to comply with section 1307. In order to provide guidance to PSWC and any other water utility that may need to implement a DSIC, the Commission has developed sample tariff language that, if used in a water utility's section 1307 proposed tariff supplement, is likely to receive the Commission's approval. The sample tariff language is contained in Appendix A to this order.

The major differences between the tariff supplement proposed by PSWC and the sample tariff language in Appendix A can be summarized as follows:

- specification of the eligible plant accounts by type and account number;
- provision to include recovery of main extensions installed to implement solutions to regional water

supply problems that have been documented as presenting a significant public health and safety concern to existing customers;

--specification that the costs of projects funded by PENNVEST loans are not eligible;

--provision of a prospective January 1, 1997 effective date for the tariff supplement and the property eligible for the initial filing;

--if more than 2 years have elapsed since the utility's last base rate case, use of the equity return rate determined by staff and specified in the latest Quarterly Earnings Report released by the Commission;

--greater specification of the depreciation and pretax return elements in the formula to calculate the DSIC;

--added provision to provide interest to consumers for any over recoveries during operation of the DSIC; and

--provision for customer notice of any DSIC changes.

Thus, use of the sample tariff language will fully explain the DSIC computation, including a listing of DSIC eligible property and related account numbers, so that in future years the purpose and intent of the DSIC surcharge will be apparent from reading only the tariff supplement. Additionally, the inclusion of plant account numbers and descriptions of property eligible for DSIC cost recovery parallels the format used for other section 1307 surcharges, such as the ECR for electric utilities, the GCR for gas distribution utilities and the SCR for steam heat companies.

With these changes to PSWC's proposal, the eligible property, filing dates, parameters, and consumer safeguards have been significantly strengthened. In particular, we note here that the provisions (1) for resetting the DSIC to zero if the company's rate of return exceeds its allowable rate of return, and (2) for resetting the DSIC to zero as of the effective date of new section 1308 base rates that provide for prospective recovery of the eligible plant costs both serve as effective and reliable rate mechanisms to insure that the DSIC automatic adjustment clause will not produce rates in excess of a fair return to the utility, as required by section 1307(a). We also note that the provision of a 5% of billed revenues cap on the maximum amount of any DSIC insures that the surcharge mechanism will not evade the section 1308 base rate process and its intensive top-to-bottom review of all company revenue, expense, rate base and return claims. See Appendix A. In other words, the 5% cap will insure that the surcharge will not allow the company to avoid a base rate review of the eligible property in perpetuity.

Accordingly, although we are denying the PSWC petition to the extent that it requests permission to file and implement a section 1307(a) tariff supplement to implement a surcharge as set forth in its Exhibit A, we invite the company to file a new tariff supplement consistent with the parameters outlined in the sample tariff language set forth in Appendix A to this order. The sample tariff language in Appendix A is identical to that recommended for the Pennsylvania-American Water Company at Docket No. P-00961031 which has also requested permission to file a DSIC surcharge.

As with other section 1307 tariff filings, the new tariff supplement would provide for a notice period of no less than 60 days to allow sufficient time for staff review of the proposed tariff supplement and its initial rates for consistency with the sample tariff language and for accuracy of the plant account, depreciation, pre-tax return and other elements of the DSIC calculation. If recommended for approval by staff and formally approved by the Commission, the tariff supplement and initial rates to implement the DSIC will be permitted to go into effect, subject to the outcome of any timely filed complaints. Subsequent quarterly updates, however, may be filed on 10 days notice as originally proposed by the company. *Therefore,*

It Is Ordered That:

1. The petition filed by the Philadelphia Suburban Water Company (PSWC) to file and implement a

section 1307(a) automatic adjustment clause tariff that would establish a Distribution System Improvement Charge (DSIC) is hereby approved in part and denied in part consistent with this order.

2. All protests, answers and other objections filed with respect to the PSWC petition are hereby granted in part and denied in part consistent with this order.

3. Any complaints regarding the rates to be charged pursuant to a DSIC tariff supplement may be filed if and when PSWC files a tariff supplement with specific rates in accordance with the tariff parameters outlined by this order.

4. The parameters set forth in the Appendix A are hereby adopted to serve as sample tariff language to be implemented for tariff supplements to establish a DSIC.

5. The normal auditing, reconciliation, reporting and public hearing procedures applicable to all 1307 (e) filings will likewise apply to all DSIC tariff supplements.

6. This order be published in the *Pennsylvania Bulletin*.

7. This order be served upon Philadelphia Suburban Water Company, the Office of Consumer Advocate, the Office of Small Business Advocate, the Office of Trial Staff and the National Association of Water Companies.

JOHN G. ALFORD,
Secretary

APPENDIX A

Sample Tariff Language

Distribution System Improvement Charge (DSIC)

I. General Description

Purpose: To recover the fixed costs (depreciation and pre-tax return) of certain nonrevenue producing, nonexpense reducing distribution system improvement projects completed and placed in service and to be recorded in the individual accounts, as noted below, between base rate cases and to provide the Company with the resources to accelerate the replacement of aging water distribution infrastructure, to comply with evolving regulatory requirements imposed by the Safe Drinking Water Act and to develop and implement solutions to regional water supply problems. The costs of extending facilities to serve new customers are not recoverable through the DSIC. Also, Company projects receiving PENNVEST funding are not DSIC-eligible property.

Eligible Property: The DSIC-eligible property will consist of the following:

--services (account 323), meters (account 324) and hydrants (account 325) installed as in-kind replacements for customers;

--mains and valves (account 322) installed as replacements for existing facilities that have worn out, are in deteriorated condition, or upgraded to meet Chapter 65 regulations of Title 52;

--main extensions (account 322) installed to eliminate dead ends and to implement solutions to regional water supply problems that have been documented as presenting a significant health and safety concern for customers currently receiving service from the company or the acquired Company;

--main cleaning and relining (account 322) projects; and

--unreimbursed funds related to capital projects to relocate Company facilities due to highway relocations.

Effective Date: The DSIC will become effective for bills rendered on and after January 1, 1997.

II. Computation of the DSIC

Calculation: The initial charge, effective January 1, 1997, shall be calculated to recover the fixed costs of eligible plant additions that have not previously been reflected in the Company's rate base and will have been placed in service between September 1, 1996, and November 30, 1996. Thereafter, the DSIC will be updated on a quarterly basis to reflect eligible plant additions placed in service during the 3-month periods ending 1 month prior to the effective date of each DSIC update. Thus, changes in the DSIC rate will occur as follows:

Effective Date of Change	Date To Which DSIC-Eligible Plant Addition Reflected
April 1	February 28
July 1	May 30
October 1	August 31
January 1	November 30

The fixed costs of eligible distribution system improvement projects will consist of depreciation and pre-tax return, calculated as follows:

Depreciation: The depreciation expense will be calculated by applying to the original cost of DSIC-eligible property the annual accrual rates employed in the Company's last base rate case for the plant accounts in which each retirement unit of DSIC-eligible property is recorded.

Pre-tax return: The pre-tax return will be calculated using the State and Federal income tax rates, the Company's actual capital structure and actual cost rates for long-term debt and preferred stock as of the last day of the 3-month period ending 1 month prior to the effective date of the DSIC and subsequent updates. The cost of equity will be the equity return rate approved in the Company's last fully-litigated base rate proceeding for which a final order was entered not more than 2 years prior to the effective date of the DSIC. If more than 2 years shall have elapsed between the entry of such a final order and the effective date of the DSIC, then the equity return rate used in the calculation will be the equity return rate calculated by the Commission Staff in the latest Quarterly Report on the Earnings of Jurisdictional Utilities released by the Commission.

DISC Surcharge Amount: The charge will be expressed as a percentage carried to two decimal places and will be applied to the total amount billed to each customer under the Company's otherwise applicable rates and charges, excluding amounts billed for public fire protection service and the State Tax Adjustment Surcharge (STAS). To calculate the DSIC, one-fourth of the annual fixed costs associated with all property eligible for cost recovery under the DSIC will be divided by the Company's projected revenue for sales of water for the quarterly period during which the charge will be collected, exclusive of revenues from public fire protection service and the STAS.

Formula: The formula for calculation of the DISC surcharge is as follows:

$$\text{DSIC} = \frac{(\text{DSI} \times \text{PTRR}) + \text{Dep} + e}{\text{PQR}}$$

Where:

- DSI = the original cost of eligible distribution system improvement projects.
 PTRR = the pre-tax return rate applicable to eligible distribution system improvement projects.
 =
 Dep = Depreciation expense related to eligible distribution system improvement projects.
 e = the amount calculated under the annual reconciliation feature as described below.
 PQR = Projected quarterly revenue including any revenue from acquired companies that are now being charged the rates of the acquiring company.

Quarterly updates: Supporting data for each quarterly update will be filed with the Commission and served upon the Office of Trial Staff, the Office of Consumer Advocate and the Office of Small Business Advocate at least 10 days prior to the effective date of the update.

III. Safeguards

Cap: The DSIC will be capped at 5% of the amount billed to customers under otherwise applicable rates and charges.

Audit/Reconciliation: The DSIC will be subject to audit at intervals determined by the Commission. It will also be subject to annual reconciliation based on a reconciliation period consisting of the 12 months ending December 31 of each year. The revenue received under the DSIC for the reconciliation period will be compared to the Company's eligible costs for that period. The difference between revenue and costs will be recouped or refunded, as appropriate, in accordance with section 1307(e), over a 1 year period commencing on April 1 of each year. If DSIC revenues exceed DSIC-eligible costs, such overcollections will be refunded with interest. Interest on the overcollections will be calculated at the residential mortgage lending specified by the Secretary of Banking in accordance with the Loan Interest and Protection Law (41 P. S. § 101, et seq.) and will be refunded in the same manner as an overcollection.

New Base Rates: The charge will be reset at zero as of the effective date of new base rates that provide for prospective recovery of the annual costs that had theretofore been recovered under the DSIC. Thereafter, only the fixed costs of new eligible plant additions, that have not previously been reflected in the Company's rate base, would be reflected in the quarterly updates of the DSIC.

Earning Reports: The charge will also be reset at zero if, in any quarter, data filed with the Commission in the Company's then most recent Annual or Quarterly Earnings reports show that the Company will earn a rate of return that would exceed the allowable rate of return used to calculate its fixed costs under the DSIC as described in the Pre-tax return section.

Customer Notice: Customers shall be notified of changes in the DSIC by including appropriate information on the first bill they receive following any change. An explanatory bill insert shall also be included with the first billing.

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ARIZONA WATER COMPANY
 DSIC-type Mechanisms by State

Line No.	State	Program	Frequency	Surcharge Cap	Included Plant
1					
2	Indiana	Distribution System Improvement Charge (DSIC)	Annually	5.0%	Mains, hydrants, services, meters
3	Illinois	Qualifying Infrastructure Plant Surcharge (QIPS)	Annually	5.0%	Mains, hydrants, services, meters
4	Missouri	Infrastructure System Replacement Surcharge (ISRS)	Semi-Annually	10.0%	Mains (includes relining), valves, hydrants, facility relocations
5	Ohio	System Infrastructure Charge	Annually	3.0%	Mains (includes cleaning, relining, & extensions), valves, hydrants, services, land/land rights, relok
6	Pennsylvania	Distribution System Improvement Charge (DSIC)	Quarterly	7.5%	Mains, valves, services, meters
7	California	Distribution System Improvement Charge (DSIC)	Quarterly	7.0%	Wells, pumps, mains, hydrants, services, meters, tools & equipment
8	Delaware	Distribution System Improvement Charge (DSIC)	Semi-Annually	7.5%	Mains, valves, hydrants, services, meters
9	Connecticut	Water Infrastructure Conservation Adjustment (WICA)	Semi-Annually	5.0%	Mains (includes cleaning & relining), valves, services, hydrants, meters, leak detection equipment
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Resolution Endorsing and Co-Sponsoring "The Distribution System Improvement Charge"

WHEREAS, The Pennsylvania Public Utility Commission and the Pennsylvania Legislature have adopted a promising and unique regulatory approach that encourages the acceleration of the needed remediation of aging water utility infrastructures; *and*

WHEREAS, The Distribution System Improvement Charge is an automatic adjustment charge that enables recovery of infrastructure improvement costs on a quarterly basis in between rate cases for projects that are non-revenue producing and non-expense reducing such as main cleaning and relining, fire hydrant replacement and main extensions to eliminate dead ends; *and*

WHEREAS, A videotape which explains this unique approach is being prepared by the National Association of Water Companies to help educate and inform other regulatory agencies and legislatures about the benefits of this unique approach; *and*

WHEREAS, The U.S. EPA within its Drinking Water Infrastructure Needs Survey has identified a magnitude of national infrastructure needs of \$77.2 billion in pending expenditures; *and*

WHEREAS, As the magnitude of need may be too great to be accomplished under traditional ratemaking methodologies; *and*

WHEREAS, The Distribution System Improvement Charge provides benefits to ratepayers such as improved water quality, increased pressure, fewer main breaks, fewer service interruptions, lower levels of unaccounted for water, and more time between rate cases which leads to greater rate stability; *and*

WHEREAS, Ratepayer protections are incorporated in the Pennsylvania approach: the surcharge is limited to a maximum of 5% of the water bill, annual reconciliation audits are conducted where overcollections will be refunded with interest and undercollections will be billed into future rates without interest recovery, the surcharge is reset to zero at the time of the next rate case, the charge is reset to zero if the company is over-earning, customer notice is provided, and all charges reflect used and useful plant; *now, therefore, be it*

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners (NARUC), convened at its 1999 Winter Meetings in Washington, D.C, agrees to endorse the mechanism as an example of an innovative regulatory tool that other Public Utility Commissions may consider to solve infrastructure remediation challenges in their States; *now be it further*

RESOLVED, That NARUC agrees to co-sponsor with the National Association of Water Companies the videotape of the Distribution System Improvement Charge as an educational tool to inform other regulatory agencies and legislatures about this promising new mechanism.

*Sponsored by the Committee on Water
Adopted February 24, 1999*

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) interagency 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

PENNSYLVANIA PUBLIC UTILITY COMMISSION
HARRISBURG, PENNSYLVANIA 17105-3265

**Petition of Pennsylvania-American Water
Company for Approval to Implement a
Tariff Supplement...Revising the Distribution
Distribution System Improvement Charge**

**Public Meeting held July 11, 2007
JUL-2007-OSA-0161*
Docket No.: P-00062241, et al.**

MOTION OF CHAIRMAN WENDELL F. HOLLAND

Before us for consideration is the Petition filed by the Pennsylvania American Water Company for approval to implement a tariff supplement revising the distribution system improvement charge ("DSIC"). The revision being sought is a request to raise the DSIC cap from 5% of billed revenues to 7.5% on DSIC eligible infrastructure.¹ Administrative Law Judge Wayne L. Weismandel issued a Recommended Decision which denied the Petition. I disagree with the Recommended Decision and instead will move to grant Pennsylvania-American's Exceptions which succinctly clarify the Petition's consistency with the purpose of DSIC, along with providing ample support as to the benefits expected to accrue to ratepayers with a 7.5% DSIC cap.

If there were ever a regulatory tool literally created right here 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 line loss of one of our most precious resources;
- Promotes a major objective of this Administration and this Legislature which is to fix Pennsylvania's aging infrastructure; and
- Promotes economic development as it creates hundreds of jobs.

¹ Revenue neutral projects allowed under DSIC include: main and valve replacement, main cleaning and relining, fire hydrant replacement, main extensions to eliminate dead ends, solutions to regionalization projects and meter change outs.

Background

1. National View

The DSIC mechanism 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”² and it has been designated by the Council of State Governments as “Model Legislation.”³ Nationwide, it is common knowledge that infrastructure is deteriorating throughout the country and this dilemma must be addressed in a timely, cost-effective manner.⁴ The U.S. Environmental Protection Agency cites a \$276.8 billion need to upgrade or replace drinking water infrastructure over the next 20 years.⁵ Here in the Commonwealth, the state’s portion of drinking water infrastructure needs over 20 years totals \$10.8 billion.⁶

Many 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. Under traditional ratemaking, the pace of remediation ranged from a few hundred years to 900 years, or not in any way nearing a realistic timeframe to match the actual service lives of mains (approximately 75-125 years, with exceptions based on materials and soils). Legislatures in six other states recognized that a new regulatory mechanism was needed to accelerate the pace of infrastructure upgrades at a reasonable cost. DSIC has been a key response toward resolving this challenge.

2. Pennsylvania Perspective

Prior to DSIC’s implementation in 1997, Pennsylvania-American’s timeframe to upgrade its existing, aging infrastructure was 225 years.⁷ Following DSIC’s implementation, the timeframe was reduced by nearly 25% to 170 years. A critical factor is that with its current increased investments in DSIC eligible projects over the 5% cap (the most recent⁸ quarterly filing reached 6.36%), the Company estimates a 33%

² NARUC Board of Directors, “Resolution Supporting Consideration of Regulatory Policies Deemed as Best Practices,” July 27, 2005.

³ Council of State Governments, “Suggested State Legislation,” 2000 Volume 59, pages 44-45.

⁴ 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.”

⁵ U.S. Environmental Protection Agency, “Drinking Water Infrastructure Needs Survey and Assessment,” 2003.

⁶ *Ibid.*

⁷ Other jurisdictional water companies faced similar or worse timeframes.

⁸ As of January 1, 2007.

reduction to 112 years, which more realistically reflects actual service lives.⁹ Matching replacement with service life substantially improves service reliability.

Infrastructure remediation and improved service and service reliability directly benefits customers. Upgrades of deteriorated mains are essential to reduce main breaks, service interruptions and unaccounted for water; and improve water quality, improve pressure, enhance fire protection, and achieve rate stability. Additional ratepayer benefits include these essential goals; DSIC:

- Promoted the acquisition of small and non-viable water systems, consistent with Commission policy (see 52 Pa. Code §§ 69.711 (relating to small and nonviable systems));
- Promoted the regionalization of water systems, consistent with Commission policy (see 52 Pa. Code §69.721 (relating to acquisitions));
- Reduced rate case expense by decreasing the frequency of base rate case filings;
- Allowed water utilities to afford remediation projects that would have otherwise been cost-prohibitive; and
- Decreased main breaks, service interruptions, low pressure problems, and discolored water.¹⁰

When DSIC's implementation was approved by the Commission, several critical safeguards were established, including a cap of 5% of billed revenues.¹¹ Additional safeguards include: resetting the DSIC to zero at the time of the next base rate case or if the utility is over-earning; providing notice to customers of any change in the DSIC rate; audits are conducted as needed, and an annual reconciliation audit is conducted to ascertain any over or under-collections, with any over-collections being refunded with interest at the time of the next DSIC calculation. All mains or other DSIC eligible projects have been placed into service prior to DSIC charges being issued to customers and meet used and useful parameters, which are among the foundations of utility ratemaking principles. These safeguards remain untouched by the Company's requested higher cap.

⁹ Pennsylvania-American Main Brief, page 9.

¹⁰ Aqua Pennsylvania, Inc. Correction to Amicus Curiae Brief, Docket Nos. P-00062241 and P-00062241C-0001, p. 4.

¹¹ Petition of Pennsylvania-American Water Company for Approval to Implement a Tariff Supplement Establishing a Distribution System Improvement Charge, Docket No. P-00961031, Order entered August 16, 1996, see Attachment A, "Sample Tariff Language," p. 4. The Petition was undergoing an appeal in Commonwealth Court when an amendment was enacted by the Legislature to add a section to the Public Utility Code to expressly provide for the allowance of an automatic adjustment charge for infrastructure remediation at 66 Pa. C.S. §1307 (g). The new section of the Statute was signed into law on December 18, 1996.

The Company points out that:

. . . under the ALJ's criteria, there would not be a need for a DSIC at all, so long as a minimal level of adequate service was being rendered. Fortunately, the General Assembly had a broader vision and has provided the Commission with the tools to replace aging infrastructure in the Commonwealth. PAWC simply requests that the Commission use this tool and permit the Company to increase its DSIC percentage so that the purpose of the law can be realized.¹²

Goal of An Increased Cap

Pennsylvania-American recognized that its ideal spending level for infrastructure remediation "should be adequate to keep pace with the anticipated remaining useful life of the distribution system infrastructure."¹³ The Company explained that in 2006 it accelerated its infrastructure upgrade program by over 50% and replaced 82 miles of mains. This can be compared with the pre-DSIC figure of replacing 25 miles per year. From DSIC's inception in 1997 until 2005, the Company replaced 47 miles of main, or 0.56%. The 2006 increased rate of 0.90% has been maintained in 2007 at a DSIC level of 6.36% for all of 2007, although it is only allowed to collect at 5%. As previously stated, the current accelerated rate should enable the Company to significantly reduce by 34% the amount of time it would take to make all of the needed improvements, from approximately 170 years to 112 years.¹⁴

The Company also noted its current focus on replacing smaller diameter mains due to its discovery that they were found to be a more frequent source of main breaks than larger diameter mains.¹⁵ The Company states that an increased DSIC cap to 7.5% will support its efforts to accelerate the systematic replacement of its older small diameter mains. The company estimates it can reduce by about 20 years the time in which it will be able to make the needed improvements to this segment of its distribution system. The Company points out that in comparison, "an under-funded DSIC is more likely to result in more significant costs associated with unplanned or more extensive system repairs in the future (e.g., more main breaks and service interruptions, higher levels of unaccounted for water, etc.)."¹⁶

¹² Pennsylvania-American Water Company Exceptions, Docket No. P-00062241, p. 11.

¹³ Pennsylvania-American Water Company Main Brief, p. 9.

¹⁴ *Ibid.*, pp. 8-9.

¹⁵ *Ibid.*, p. 11.

¹⁶ *Ibid.*, p. 12.

The Company has determined that a higher investment level is essential for it to keep pace with the anticipated remaining useful life of the distribution system infrastructure.¹⁷ In fact, the Company summarizes the evidence presented in the instant case as revealing a choice between:

... (1) providing the Company with adequate resources (a 7.5% DSIC cap) to support a three-year or more base rate case filing cycle, or (2) providing the Company with more limited resources (a 5% DSIC cap) that would encourage a more frequent base rate case cycle – every year or two.¹⁸

The Company summarizes further that:

... the current DSIC cap of 5% will still be inadequate to provide the Company with resources adequate to achieve the Commission's long term objective – to accelerate the replacement of PAWC's efforts to accelerate its distribution system improvement program and encouraging the Company to make reasonable frequent base rate case filings.¹⁹

A higher DSIC rate today is consistent with the legislative intent to economically accelerate infrastructure remediation:

The DSIC more accurately reflects the ongoing investments and improvements that are made in the water distribution system versus the less frequent but larger step increases that would result from base rate increases without an appropriately funded DSIC. The timely recovery of the fixed costs of infrastructure replacement through the DSIC provides an incentive for increased and continued levels of capital infusion. This results in a stronger and more reliable water distribution system for both current and future customers.²⁰

Moreover, I note that Pennsylvania-American's customers' rates at the 5% DSIC rate average \$1.75 a month. With a 7.5% DSIC, that rate will increase by \$1.00 a month. It should be kept in mind that this rate will be reset to zero following the next base rate case (or at any time that the Company is over-earning) and it takes a number of billing cycles of progressive increases over a few years to rise to the allowed level of the cap.

¹⁷ *Ibid.*, p. 9

¹⁸ Pennsylvania-American Exceptions, p. 12.

¹⁹ *Ibid.*

²⁰ Pennsylvania-American Main Brief, p. 13.

Most importantly, DSIC represents a dollar-for-dollar recovery of prudent expenses incurred for improving reliability to customers.

In addition, a response is necessary to the argument put forth by the Office of Consumer Advocate (“OCA”) that simple presentation of expenses virtually guarantees recovery.²¹ Expense recovery is granted only for those DSIC eligible projects that are prudently incurred, in service and used and useful. In raising the level of DSIC expense recovery, we clearly intend to continue its cautious use. Contrary to the OCA’s reference to the reasoning of the Commonwealth Court in the recent Collection System Improvement Charge Appeal,²² the DSIC review and audit process includes a determination of compliance and prudence. Hence, the Court’s reference to recovery of projects being relatively automatic (using the example of a solid gold manhole cover being allowed, provided the expense was made and submitted) is simply not accurate nor reflective of the extensive and thorough DSIC review process.

Finally, I am mindful of the value of DSIC: “its success cannot be denied. It is now time to improve upon that success by allowing an incremental increase in the cap.”²³ I wholeheartedly agree.

THEREFORE, I MOVE:

1. That the Recommended Decision of Administrative Law Judge Wayne L. Weismandel is rejected, consistent with this Motion;
2. That the Exceptions of the Pennsylvania-American Water Company are granted;
3. That the Petition of Pennsylvania-American Water Company to implement a tariff supplement revising the distribution system improvement charge is granted.
4. That the Office of Special Assistants shall prepare the appropriate order consistent with this Motion.

DATE

WENDELL F. HOLLAND, CHAIRMAN

²¹ Office of Consumer Advocate Main Brief, p. 12.

²² *Popowsky v. Pa. PUC*, 869 A.2d 1144, 1156 (2005).

²³ Aqua Pennsylvania Amicus Curiae Brief, p. 3.

INFRASTRUCTURE REPLACEMENT AND ASSET MANAGEMENT¹⁶

Surveys conducted by the EPA suggest that the need for water and wastewater infrastructure improvement and replacement (both privately and publicly owned) over the next 20 years is between \$500 billion and \$1 trillion. This dollar level reflects a growing need across the nation to replace water and sewer pipes and other water and wastewater facilities as they approach the end of their useful lives.

The reason for this surge in infrastructure needs stems from the population boom and economic growth at the end of World War II. During those post-war years, there was unprecedented industrial, business, commercial and residential development, along with the water and wastewater infrastructure to support it. That infrastructure is now reaching the age when it is beginning to wear out and needs to be upgraded or replaced. Water and wastewater utilities need to manage those assets actively or risk adverse economic consequences, such as unplanned system failures, increased maintenance costs, and unbudgeted repair and replacement costs. Depending on the length of the useful life of various components, the need to replace this infrastructure will continue over the next several decades.

WATER: THE INDUSTRY AT A GLANCE 135

Many utilities have conducted plans consisting of a complete assessment of utility facilities and assets, including a determination of the condition and remaining useful life of each component of the system, right down to each segment of buried pipe. Components of the system are also rated in terms of criticality for operation of the system. A model is often developed based on asset condition, criticality, and other relevant factors to prioritize the infrastructure replacement and improvement needs over time. Costs are then applied to determine reinvestment needs over time.

The goal of these plans is to determine a reinvestment timeline that will allow continued operation of critical infrastructure throughout its useful life, but will ensure replacement before it fails and before maintenance costs increase dramatically. Planners then can prepare infrastructure replacement schedules and budgets that will spread out the costs of improvements over a pre-established planning horizon. This scheduling and budgeting will avoid unplanned maintenance and capital costs to the utility while maintaining efficient operation of the system.

This situation poses several challenges for utilities and regulatory commissions. One challenge is how to finance the necessary infrastructure replacements such that (a) rates increase gradually (as opposed to sudden spikes in rates) while (b) maintaining the utilities' financial stability. A second challenge is ensuring that the large expenditures are made prudently, so as to win and sustain customer trust and political credibility. Adding to the challenge is the absence, for most utilities, of a designated fund available to replace aging infrastructure—an absence attributable to ratemaking practices which have kept depreciation rates low and have disallowed or discouraged rate recovery of contributions in aid of construction.

Line No.	[A]	[B]	[C]	[D]
1	TEST YEAR DATA			
2	Eligible DSIC Plant in Service			
3	Accumulated Depreciation			
4	(Sch. 8, p. 1)			
5	Eligible DSIC Plant Rate Base	\$ 2,500,000		
6	Required Rate of Return	\$ 2,500,000		
7	(Proposed)	9.51%		
8	Required Operating Income	\$ 237,750		
9	(Ln. 6 x Ln. 7)			
10	Revenue Conversion Factor	1.6569		
11	(Decision No. 71845)			
12	Revenue Requirement - Return on Eligible DSIC Plant	\$ 393,927		
13	(Ln. 9 x Ln. 11)			
14	Depreciation on Eligible DSIC Plant	\$ 45,248		
15	(Sch. 8, p. 1)			
16	Total Revenue Requirement	\$ 439,175		
17	(Ln. 13 + Ln. 16)			
18	Total Operating Revenue	17,358,501		
19	Maximum increase cap	7.5%		
20	Total Operating Revenue Limited by cap	\$ 1,301,888		
21	(Ln. 22 X Ln. 24)			
22	Total Revenue Requirement (lesser of L. 19 or 26)	\$ 439,175		
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37	5/8 X 3/4-INCH RESIDENTIAL METER			
38	Basic Service Charge			
39	Commodity Rate (Per M Gallon)			
40	0 - 3,000 Gallons	\$ 15.79	\$ 0.50	\$ 16.29
41	3,001 - 10,000 Gallons	\$ 1.3700	\$ 0.0437	\$ 1.4137
42	Over 10,000 Gallons	\$ 1.7123	\$ 0.0437	\$ 1.7560
43		\$ 2.1406	\$ 0.0437	\$ 2.1843
44				
45				
46				
47				
48				
49				
50				
51	5/8 X 3/4-INCH RESIDENTIAL METER			
52	Basic Service Charge			
53	Commodity Rate (Per M Gallon)			
54	0 - 3,000 Gallons	\$ 15.79	\$ 0.50	\$ 16.29
55	3,001 - 10,000 Gallons	\$ 2.4379	\$ 0.0437	\$ 2.4816
56	Over 10,000 Gallons	\$ 3.0476	\$ 0.0437	\$ 3.0913
57		\$ 3.8097	\$ 0.0437	\$ 3.8534
58				
59	Average Residential Bill (5/8 x 3/4 meter) - Casa Grande / Coolidge (8,522 gallons of usage)	\$ 29.36	\$ 0.87	\$ 30.23
60	Average Residential Bill (5/8 x 3/4 meter) - Stanfield (8,522 gallons of usage)	\$ 39.93	\$ 0.87	\$ 40.81
61				
62				
63				

PINAL VALLEY (CASA GRANDE/COOLIDGE)			
Current Rates	Decision No. 71845	Proposed Rates	Total [B+C]
\$ 15.79	\$ 0.50	\$	\$ 16.29
\$ 1.3700	\$ 0.0437	\$	\$ 1.4137
\$ 1.7123	\$ 0.0437	\$	\$ 1.7560
\$ 2.1406	\$ 0.0437	\$	\$ 2.1843

PINAL VALLEY (STANFIELD)			
Current Rates	Decision No. 71845	Proposed Rates	Total [B+C]
\$ 15.79	\$ 0.50	\$	\$ 16.29
\$ 2.4379	\$ 0.0437	\$	\$ 2.4816
\$ 3.0476	\$ 0.0437	\$	\$ 3.0913
\$ 3.8097	\$ 0.0437	\$	\$ 3.8534

EXHIBIT
J

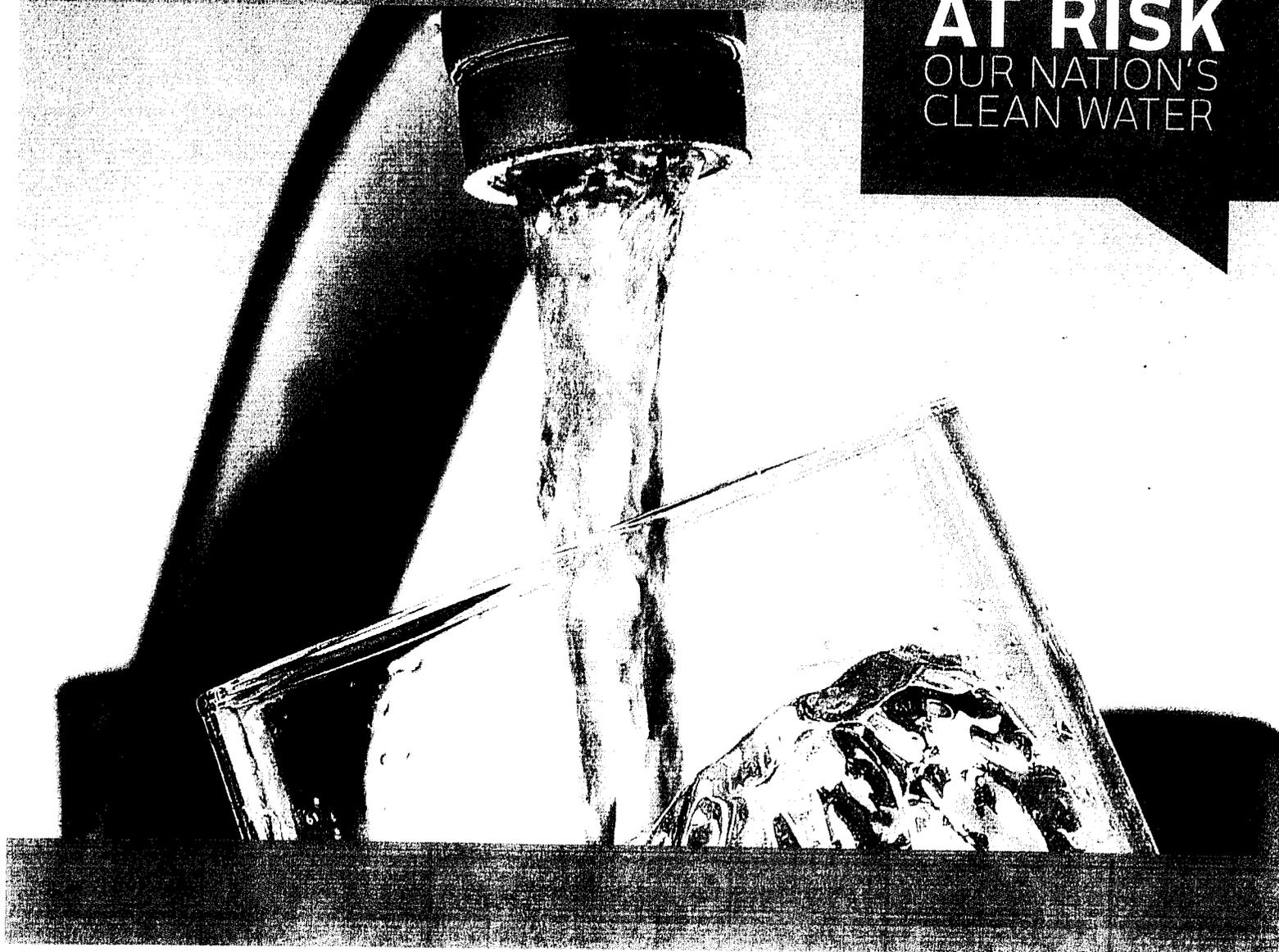
VALUE OF WATER SURVEY

AMERICANS ON THE U.S. WATER CRISIS

650
WATER MAIN
BREAKS
PER DAY

\$2.6
BILLION IN
LOST WATER
EVERY YEAR

AT RISK
OUR NATION'S
CLEAN WATER



EXECUTIVE SUMMARY

95% of American voters value water over any other service they receive, including heat and electricity

Our nation's industrial and agricultural businesses—among the heaviest water users—rank it second, after only electricity

About three out of four American voters and businesses* say disruptions in the water system would have direct and personal consequences

Too many take clean water for granted: 69% of voters, 72% of businesses*

When asked, U.S. voters and businesses* do express concern about our nation's water.

- ◆ Nearly one in four American voters is "very concerned" about the state of the nation's water infrastructure
- ◆ 29% percent of voters agree that water pipes and systems in America are crumbling and approaching a state of crisis
- ◆ 80% of voters say water infrastructure needs reform; about 40% say major reform

*INDUSTRIAL AND AGRICULTURAL BUSINESSES ONLY

EXECUTIVE SUMMARY

People understand that

fixing our nation's water infrastructure problems is a shared responsibility:

- 85% of voters, 83% of businesses* agree federal, state and local governments should invest money in upgrading our water pipes and systems
- 79% of voters, 75% of businesses* agree and think government officials need to spend more time addressing water issues
- Both citizens and businesses* understand and accept responsibility
- 63% of American voters, and 57% of businesses* say they are willing to pay a little more each month to upgrade our water system

People everywhere are

willing to pay more, regardless of region, residence, gender, age or political affiliation

- Voters are willing to pay on average \$6.20 more per month
- If we took them up on their offer, the United States could invest about \$5.4 billion more per year in our nation's water infrastructure**
- This is more than four times the FY09 federal investment in our nation's drinking water systems

*INDUSTRIAL AND AGRICULTURAL BUSINESSES ONLY

**BASED ON 2010 CENSUS U.S. BUREAU PROJECTIONS: 114,200,000 U.S. HOUSEHOLDS