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ARIZONA WATER COMPANY

Arizona Corporation Commission

Docket No. W-01445A-15-0277

2015

WESTERN GROUP

RATE HEARING

Direct Testimony

of

William M. Garfield

EXHIBIT

A-4

admitted 5-12-16

TABLE OF CONTENTS

I. Introduction and Qualifications 3
II. General Background of Arizona Water's Application 5
III. Arizona Water's Plan to Use CAP Water 7
Pinal Valley Service Area 7
White Tank Service Area 10
Proposed Regulatory Treatment of CAP Related Costs 14
IV. Aging Infrastructure 16
V. Arizona Water's Need and Ability to Attract Capital 18
Declining Sales 20
Rate design 21
Safe Drinking Water Standards - Arsenic and Nitrates 21
Capital Intensity and Aging Infrastructure 26
Arizona Water's Relative Small Size 28
VI. Nitrate and Arsenic Cost Recovery Mechanisms 29

EXHIBITS

Deteriorating Buried Infrastructure Management Challenges and Strategies: United States Environmental Protection Agency, (May, 2002) WMG-1

ADEQ Fact Sheet, *Ambient Groundwater Quality of the Pinal Active Management Area: A 2005-06 Baseline Study - October 2007* WMG-2

Arizona Water Company Annual Report Excerpt – Year Ending 12/31/2014 ..... WMG-3

Joint Water Research Foundation/EPA report, *Improving Water Utility Capital Efficiency, 2009, ISBN 978-1-60573-059-2* WMG-4

ARIZONA WATER COMPANY

Direct Testimony of

William M. Garfield

I. Introduction and Qualifications

Q. PLEASE STATE YOUR NAME, EMPLOYER AND OCCUPATION.

A. My name is William M. Garfield. I am employed by Arizona Water Company ("Arizona Water" or "Company") as its President and Chief Operating Officer ("COO"). As such, I am responsible for the management and operations of the Company. Each of Arizona Water's officers reports directly to me, and I report directly to Arizona Water's Chief Executive Officer.

Q. PLEASE DESCRIBE YOUR WORK EXPERIENCE, EDUCATIONAL BACKGROUND AND PROFESSIONAL AFFILIATIONS.

A. Since joining Arizona Water in 1984, I have held the positions of Engineer, Senior Engineer, Operations Manager, and Vice President of Operations. I currently hold the position of President and COO, which I have held since July 18, 2003.

I completed my undergraduate studies at Southern Illinois University at Carbondale, receiving a Bachelor of Science degree with honors in Thermal and Environmental Engineering. I have taken post-graduate coursework at Arizona State University in Civil Engineering, including courses in hydrology, water and wastewater treatment, and statistics. I am a member of Tau Beta Pi, a national honorary engineering society.

I am a member of the Arizona Water Association, the American Water Works Association ("AWWA"), and I serve on AWWA's Water Meter Standards Committee. I have been active in numerous water industry stakeholder groups involving the Arizona Department of Environmental Quality ("ADEQ"), the Arizona Department of Water Resources ("ADWR") and the Central Arizona

Groundwater Replenishment District. I am an ADEQ certified water distribution system and water treatment plant operator. I serve on Arizona Water's Board of Directors, the Board of Directors of the Water Infrastructure Finance Authority of Arizona, the Board of Directors of the Water Utilities Association of Arizona, the Water Resources Research Center's External Advisory Board, and the Board of Directors of the East Valley Partnership. In the past I have served as Chairman of the Water Management Subcommittee of the Pinal Active Management Area Groundwater User Advisory Council. In addition, I have been a member of the Statewide Water Advisory Group, I have served on the Arizona Water Institute's External Advisory Board, and I was a member of the Economic Working Group of the Blue Ribbon Panel on Sustainability, a panel formed to address water sustainability which was jointly chaired by the Arizona Corporation Commission ("Commission"), ADWR and ADEQ.

Q. HAVE YOU PREVIOUSLY TESTIFIED ON BEHALF OF ARIZONA WATER IN ANY PROCEEDINGS BEFORE THE COMMISSION?

A. Yes. In addition to testifying on Certificate of Convenience and Necessity cases, I have testified in Arizona Water's last seven general rate case proceedings.[1]

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. I summarize Arizona Water's rate application, discuss the public policy reasons supporting the Company's proposed regulatory treatment of Central Arizona Project ("CAP") water related costs, and provide background on the unique risk factors facing the Company which the Commission should consider in determining the authorized return on equity ("ROE"). I also discuss Arizona Water's requests for a system improvement benefits ("SIB") surcharge mechanism, nitrate cost recovery mechanism ("NCRM") and continuation of the arsenic cost recovery mechanism ("ACRM").

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[1] *See* Docket Nos. W-01445A-00-0962, W-01445A-02-0619, W-01445A-04-0650, W-01445A-08-0440, W-01445A-10-0517, W-01445A-11-0310 and W-01445A-12-0348.

II. General Background of Arizona Water's Application

Q. PLEASE SUMMARIZE ARIZONA WATER'S GENERAL RATE CASE APPLICATION.

A. In order to recover its cost of providing water utility service, Arizona Water is requesting an increase in utility revenues of $6,010,408, or 28.33% over current rates in its Western Group, which includes the Pinal Valley, White Tank and Ajo service areas. Arizona Water's requested increase is primarily driven by the need to make full beneficial use of its Western Group CAP allocations, as well as increases in utility plant investment, operating expenses, and the cost of capital.

Q. IS ARIZONA WATER REQUESTING REGULATORY TREATMENT OF CAP COSTS IN THIS PROCEEDING?

A. Yes. On August 7, 2015, Arizona Water filed in this docket updated plans to fully use its CAP water allocations in the Pinal Valley and White Tank service areas, through groundwater recharge, storage, and recovery 2015 CAP Use Plans.[2] Arizona Water's 2015 CAP Use Plans address the State of Arizona's legal mandate and urgent public policy to use renewable supplies, such as CAP water, thereby protecting and preserving groundwater resources from depletion. The 2015 CAP Use Plans also describe Arizona Water's plan to protect against the effects of drought by storing CAP water underground. Arizona Water's 2015 CAP Use Plans describe the lowest cost options for using CAP water for the benefit of Arizona Water's customers, saving the average residential customer in Pinal Valley 89 percent, or $24 per month and saving the average residential customer in White Tank 77 percent, or $33 per month, compared to constructing and operating costly and labor intensive surface water treatment plants, as was contemplated under the 2006 CAP Use Plan. Along with these significant

[2] As required by the Commission in Decision No. 68302, the Company docketed its original 2006 CAP Use Plan with the Commission on December 29, 2006.

customer savings, the 2015 CAP Use Plans help assure that future water supplies will be available by reducing groundwater pumping by over 50 percent.

Q. WHY AND HOW IS ARIZONA WATER PROPOSING TO REDUCE WATER LOSS?

A. In its 2007 test year total-Company general rate case (Docket No. W-01445A-08-0440), the Commission ordered Arizona Water to reduce non-account water (i.e., water losses) to less than 10 percent for all of its water systems, including those in the Western Group.[3] Arizona Water's ability to reduce water losses is hindered by the effects of aging infrastructure, the extraordinary cost of replacing aging infrastructure, and the need for a mechanism to timely recover the costs associated with replacing and repairing aging infrastructure. Arizona Revised Statutes ("A.R.S.") §40-321 and §40-322 require public water systems such as Arizona Water's systems, to comply with safe drinking water standards and to provide safe, reliable and adequate water service to customers.

As Mr. Reiker explains in Section III of his pre-filed direct testimony, in exchange for this commitment, Arizona Water is entitled to the opportunity to recover the costs it prudently incurs in fulfilling this obligation. Recognizing the need for a mechanism that provides a realistic opportunity for water utilities to recover a portion of the significant cost of replacing aging infrastructure needed to provide reliable water service, in 2013 the Commission established the System Improvement Benefits ("SIB") surcharge mechanism. Accordingly, Arizona Water requests Commission approval of a SIB surcharge mechanism for the company's Western Group in this proceeding.

Q. DOES ARIZONA WATER FACE SIGNIFICANT COSTS RELATED TO COMPLYING WITH GOVERNMENT-MANDATED SAFE DRINKING WATER STANDARDS?

[3] *See* Decision No. 71845, Page 92, Lines 27–28 and Page 93, Lines 1–8.

A. Yes. Arizona Water continues to face significant costs to build treatment plants to remove arsenic as required by government-mandated safe drinking water standards. Accordingly, Arizona Water requests that the Commission continue the ACRM for the Company's Western Group. The ACRM has proven to be an effective mechanism to facilitate recovery of federally mandated costs to construct and operate water treatment plants for the purpose of complying with safe drinking water standards.

Arizona Water also faces federally mandated costs to build and operate treatment plants to remove high levels of nitrates from groundwater in Arizona Water's Pinal Valley service area. Accordingly, Arizona Water requests Commission authorization of an NCRM, identical in function to the ACRM. Arizona Water must design and construct four nitrate removal facilities in the Pinal Valley service area. The cost to design, construct, operate, and maintain these nitrate removal facilities, as described in Mr. Schneider's pre-filed direct testimony, is even greater than that of similarly-sized arsenic removal facilities.

III. Arizona Water's Plan to Use CAP Water

Pinal Valley Service Area

Q. HOW DOES ARIZONA WATER PLAN TO DELIVER CAP WATER TO GENERAL SERVICE CUSTOMERS IN THE PINAL VALLEY SERVICE AREA?

A. As described in the Pinal Valley 2015 CAP Use Plan, filed with the Commission in this docket on August 7, 2015, Arizona Water will deliver its CAP water allocation to general service customers in the Pinal Valley service area through recharge and recovery beginning in 2015. Arizona Water will accomplish this by recharging CAP water at its Pinal Valley Recharge and Recovery Facility it will begin constructing in 2016. Prior to constructing its Pinal Valley Recharge and Recovery Facility, Arizona Water is storing CAP water on an interim basis at groundwater savings facilities operated by Central Arizona Irrigation and Drainage District, Hohokam Irrigation and Drainage District, and Maricopa-

Stanfield Irrigation and Drainage District. After storing CAP water underground, Arizona Water will recover the stored CAP water from recovery wells and deliver it to general service customers throughout the Pinal Valley service area. Mr. Schneider describes Arizona Water's Pinal Valley Recharge and Recovery Facility in greater detail in Section VII of his pre-filed direct testimony.

Q. HOW DOES THE PINAL VALLEY 2015 CAP USE PLAN COMPARE TO ARIZONA WATER'S 2006 CAP USE PLAN FILED WITH THE COMMISSION IN DECEMBER 2006?

A. The principal difference is that Arizona Water plans to construct a recharge and recovery facility at an estimated cost of $5.8 million instead of constructing a 10 million gallon per day ("MGD") surface water treatment plant at an estimated cost, in 2006 dollars, of up to $66 million. As Mr. Schneider explains in Section VII of his pre-filed direct testimony, that $66 million cost grew to more than $94 million after further refinements to design specifications and a general increase in equipment, materials, and construction costs.

Q. PLEASE ELABORATE ON THE PINAL VALLEY 2015 CAP USE PLAN'S COST SAVINGS.

A. Arizona Water's Pinal Valley 2015 CAP Use Plan achieves the following cost savings over its original 2006 CAP Use Plan:

- Construction cost savings of $88 million.
- Operating cost savings of $2.4 million per year.
- Customer savings of $17.5 million per year.
- Recharge and recovery versus a labor intensive and costly surface water treatment facility.
- Residential customer savings of more than $24 per month or 89 percent.

Q. HOW WILL ARIZONA WATER FUND THE PINAL VALLEY RECHARGE AND RECOVERY FACILITY?

A. Arizona Water is funding the design and construction of the Pinal Valley Recharge and Recovery Facility primarily with offsite facilities fees, which are recorded as contributions in aid of construction and excluded from rate base, thereby keeping customer rates low. The Company is also seeking federal and state grants and, if necessary, will use Company funds. Mr. Harris describes the use of offsite facilities fees in greater detail his pre-filed direct testimony.

Q. HAS ARIZONA WATER TAKEN ANY OTHER STEPS TO REDUCE THE COST OF RECHARGING CAP WATER?

A. Yes. Arizona Water applied for and received a $357,500 grant from ADWR from its Water Management Assistance Program to offset the cost to purchase and store 5,000 acre-feet of CAP water in the Pinal Valley service area in 2015. This grant reduced Arizona Water's cost by 50 percent. Arizona Water, on July, 31, 2015, requested Commission authorization to defer for recovery in this rate case, its actual net cost of $357,500 to deliver CAP water to Pinal Valley customers in 2015. The public policy of maximizing the use of renewable water supplies such as CAP water through recharge and recovery, as described below, supports the recovery of such costs. Particularly when the utility actively seeks out and receives grant funding.

Q. CAN YOU PROVIDE A SUMMARY OF THE PROJECTED TOTAL COST OF DELIVERING CAP WATER TO CUSTOMERS IN THE PINAL VALLEY SERVICE AREA BY YEAR UNTIL THE COMPANY'S FULL CAP ALLOCATION IS USED IN APPROXIMATELY 2020?

A. Yes. Assuming the Commission approves Arizona Water's proposed regulatory treatment of CAP related costs in this proceeding, the Company plans to increase the amount of CAP water delivered through recharge and recovery each year until its full 10,884 acre-feet per year CAP allocation is used in approximately 2020. The following table summarizes the net cost per year:

Table 3-1 Pinal Valley CAP Water Deliveries and Cost to Recharge CAP Water

Year	Pinal Valley Recharge and Recovery Facility (AF)	Groundwater Savings Facility Recharge (AF)	Cost of CAP Water ($/AF)	Groundwater Savings Facility Offset ($/AF)	ADWR Grant ($)	Total Recharge And Recovery Facility Cost ($)	Total Groundwater Savings Facility Cost ($)	Net Total Cost ($)	Net Cost ($/AF)
2015	0	5,000	$157	$36	$357,500	$0	$247,500	$247,500	$50
2016 *	0	6,000	$161	$36	TBD	$0	$750,000	$750,000	$125
2017	2,650	4,350	$166	$36	TBD	$439,900	$565,500	$1,005,400	$144
2018	5,400	2,600	$171	$36	TBD	$923,400	$351,000	$1,274,400	$159
2019	8,000	956	$174	$36	TBD	$1,392,000	$131,928	$1,523,928	$170
2020 **	8,956	0	$196	N/A	TBD	$1,755,376	$0	$1,755,376	$196

*Note 1: CAP water ordered for 2017 at the Pinal Valley Recharge and Recovery Facility after first basin is completed.
**Note 2: Maximum recharge is 8,956 AF (10,884 AF – 1,928 AF) after 1,928 AF delivered to non-potable users.

White Tank Service Area

Q. HOW DOES ARIZONA WATER PLAN TO DELIVER CAP WATER TO GENERAL SERVICE CUSTOMERS IN THE WHITE TANK SERVICE AREA?

A. As described in the White Tank 2015 CAP Use Plan, filed with the Commission in this docket on August 7, 2015, Arizona Water plans to deliver its CAP water allocation to general service customers in the White Tank service area through recharge and recovery beginning in 2016. Arizona Water will accomplish this by recharging CAP water at its White Tank Recharge and Recovery Facility it plans to construct beginning in 2018. Prior to constructing its White Tank Recharge and Recovery Facility, Arizona Water will store CAP water on an interim basis at a groundwater savings facility operated by Maricopa Water District. After storing CAP water underground, the Company will recover the stored CAP water from recovery wells and deliver it to general service customers throughout the White Tank service area. Mr. Schneider describes Arizona Water's White Tank Recharge and Recovery Facility in greater detail in Section VII of his pre-filed direct testimony.

Q. HOW DOES THE WHITE TANK 2015 CAP USE PLAN COMPARE TO ARIZONA WATER'S 2006 CAP USE PLAN FILED WITH THE COMMISSION IN DECEMBER 2006?

A. The principal difference is Arizona Water plans to construct a recharge and recovery facility at an estimated cost of $2.6 million instead of paying to construct a 1.0 MGD capacity share of Arizona-American Water Company's surface water treatment plant and 8 miles of 12-inch water transmission line at a cost in today's dollars of $11.2 million.

Q. PLEASE ELABORATE ON THE WHITE TANK 2015 CAP USE PLAN'S COST SAVINGS.

A. Arizona Water's 2015 CAP Use Plan achieves the following cost savings over its original 2006 CAP Use Plan:

- Construction cost savings of $8.6 million.
- Operating cost savings of $180,000 per year.
- Customer savings of $1.6 million per year.
- Recharge and recovery versus a labor intensive and costly surface water treatment facility and 12-inch water transmission line.
- Residential customer savings of more than $33 per month or 77 percent.

Q. WHEN WILL ARIZONA WATER BE ABLE TO RECHARGE CAP WATER IN ITS WHITE TANK WATER SYSTEM?

A. Arizona Water plans to recharge CAP water at Maricopa Water District's groundwater storage facility beginning in 2016 or in the alternative, at one of the Central Arizona Water Conservation District's ("CAWCD") underground storage facilities.

Q. ARE THESE THE ONLY WAYS ARIZONA WATER WILL USE CAP WATER?

A. No. Arizona Water plans to construct its own recharge and recovery facility in the White Tank service area and store CAP water at this new facility.

Q. HOW DOES ARIZONA WATER PLAN TO FUND THE CONSTRUCTION OF THE WHITE TANK RECHARGE AND RECOVERY FACILITY?

A. In the same manner as Arizona Water's Pinal Valley Recharge and Recovery Facility, primarily with offsite facilities fees. The Company will also

seek federal and state grants, and if necessary, will use Company funds. Mr. Harris describes the use of offsite facilities fees in greater detail his pre-filed direct testimony, in which he proposes to establish an offsite facilities fee tariff for Arizona Water's White Tank water system.

Q. CAN YOU PROVIDE A SUMMARY OF THE PROJECTED TOTAL COST OF DELIVERING CAP WATER TO CUSTOMERS IN THE WHITE TANK SERVICE AREA BY YEAR UNTIL THE COMPANY'S FULL CAP ALLOCATION IS USED IN APPROXIMATELY 2020?

A. Yes. Assuming the Commission approves Arizona Water's proposed regulatory treatment of CAP related costs in this proceeding, the Company plans to increase the amount of CAP water delivered through recharge and recovery each year until its full 968 acre-feet per year CAP allocation is used in approximately 2020. The following table summarizes the net cost per year:

Table 3-2 White Tank CAP Water Deliveries and Cost to Recharge CAP Water

Year	White Tank Recharge and Recovery Facility (AF)	Groundwater Savings Facility Recharge (AF)	Cost of CAP Water ($/AF)	Groundwater Savings Facility Offset ($/AF)	ADWR Grant ($)	Total Recharge And Recovery Facility Cost ($)	Total Groundwater Savings Facility Cost ($)	Net Total Cost ($)	Net Cost ($/AF)
2015	0	0	$157	N/A	0	$0	$0	$0	N/A
2016*	0	375	$161	$16	TBD	$0	$54,375	$54,375	$145
2017	0	500	$166	$16	TBD	$0	$75,000	$75,000	$150
2018	625	0	$171	N/A	TBD	$106,875	$0	$106,875	$171
2019	750	0	$174	N/A	TBD	$130,500	$0	$130,500	$174
2020**	968	0	$196	N/A	TBD	$189,728	$0	$189,728	$196

*Note 1: CAP water ordered for 2018 at the White Tank Recharge and Recovery Facility after recharge basins are completed.
**Note 2: Maximum recharge is 8,956 AF (10,884 AF – 1,928 AF) after 1,928 AF delivered to non-potable users.

Q. DO ARIZONA WATER'S 2015 CAP USE PLANS COMPLY WITH ARIZONA POLICY?

A. Yes. The Company's plan to use CAP water to serve its customers through recharge and recovery complies with Arizona's public policy on water storage and water savings. More specifically, Arizona's policy on water storage, water savings and replenishment, as codified in A.R.S. §45-801.01 states:

> The public policy of this state and the general purposes of this chapter are to:
>
> 1. Protect the general economy and welfare of this state by encouraging the use of renewable water supplies, particularly this state's entitlement to Colorado River water, instead of groundwater through a flexible and effective regulatory program for the underground storage, savings and replenishment of water.
>
> 2. Allow for the efficient and cost-effective management of water supplies by allowing the use of storage facilities for filtration and distribution of surface water instead of constructing surface water treatment plants and pipeline distribution systems.

The Company's use of CAP water through recharge and recovery, as described in its 2015 CAP Use Plans, complies with and advances this policy by efficiently storing and using Colorado River water delivered by CAP. The Company's plans also advance this policy by efficiently and cost-effectively managing water supplies through the use of underground storage facilities and recovery wells, instead of constructing surface water treatment plants.

Furthermore, Arizona Water's use of CAP water as described in its 2015 CAP Use Plans, conserves and protects groundwater, in compliance with Arizona's 1980 Groundwater Management Act, as codified in A.R.S. §45-401(B), which states that:

> "It is therefore declared to be the public policy of this state that in the interest of protecting and stabilizing the general economy and welfare of this state and its citizens it is necessary to conserve, protect and allocate the use of groundwater resources of the state and to provide a frame work for the comprehensive management and regulation of the withdrawal, transportation, use, conservation and conveyance of rights to use the groundwater in this state."

In addition, Arizona Water's plan to use CAP water, as outlined in the 2015 CAP Use Plans, furthers the Pinal and Phoenix Active Management Area ("AMA") management goals by reducing the amount of groundwater pumped by 80,000 acre-feet and 8,000 acre-feet, respectively, over the next ten years,

thereby protecting and preserving those supplies for future non-irrigation uses. Recharging CAP water in underground storage and groundwater savings facilities also protects against shortages when deliveries of CAP from the Colorado River are cut back or curtailed.

Q. DO ARIZONA WATER'S 2015 CAP USE PLANS ANALYZE WATER SUPPLIES AND DEMANDS?

A. Yes. The 2015 CAP Use Plans provide overviews of water supplies and demands in the Pinal and Phoenix AMAs, both historical and projected, which show the state's reliance on over drafting native groundwater, i.e., pumping groundwater faster than it is replaced naturally. According to ADWR, increased reliance on native groundwater throughout the Pinal and Phoenix AMAs threatens the sustainability of groundwater supplies in these AMAs, which include Arizona Water's Pinal Valley and White Tank service areas. All of this points to a manifest need to maximize the beneficial use of renewable water supplies like CAP water as soon as practicable. Recharging CAP water at the Pinal Valley Recharge and Recovery Facility and White Tank Recharge and Recovery Facility, besides being efficient and cost-effective ways to manage the Company's CAP water allocations, is consistent with the policies and requirements of ADWR, CAP, and the Arizona Water Banking Authority ("AWBA").

Proposed Regulatory Treatment of CAP Related Costs

Q. PLEASE SUMMARIZE ARIZONA WATER'S PROPOSED REGULATORY TREATMENT OF CAP RELATED COSTS IN THIS PROCEEDING.

A. Arizona policy states that water agencies, including those regulated by the Commission, should maximize the use of renewable supplies like CAP water through recharge and recovery and reduce their reliance on native groundwater to the greatest extent possible. Arizona Water's 2015 CAP Use Plans were crafted to comply with this crucial public policy, with the goal of making full use of

the Company's Pinal Valley and White Tank CAP allocations by 2020. However, in order to fully implement this plan and comply with Arizona policy, the Company will incur additional costs. The Commission, in addition to setting fair and reasonable rates for utilities it regulates, also strives to further Arizona policy that serves the public interest. In this proceeding, Arizona Water requests that the Commission further Arizona public policy by authorizing the recovery of CAP costs. Specifically, Arizona Water requests that:

1. The Commission authorize the continuation of CAP Municipal and Industrial ("M&I") Fees currently in effect in the Pinal Valley and White Tank service areas, for the purpose of recovering from new customers ongoing and deferred CAP M&I capital charges. Mr. Reiker sponsors this request in Section IV of his pre-filed direct testimony.

2. The Commission include in the Pinal Valley service area's rate base $4,398,823 in additional deferred CAP M&I capital charges that are now used and useful, amortized to expense over a period of 20 years ($219,941 per year), consistent with prior Commission practice. This amount represents the pro rata portion of the December 31, 2014, balance of deferred CAP M&I capital charges related to 5,000 acre feet of CAP water delivered to general service customers in 2015. Mr. Reiker sponsors this request in Sections VI (rate base adjustment RB-3) and VII (income statement adjustment IS-12) of this pre-filed direct testimony.

3. The Commission authorize the deferral and recovery over three years of $357,500, which is the net cost of delivering 5,000 acre feet of CAP water to general service customers in the Pinal Valley service area in 2015. Mr. Reiker sponsors this request in Section VII of his pre-filed direct testimony (income statement adjustment IS-11).

4. The Commission authorize the annual recovery of $715,000 in net ongoing CAP M&I capital and delivery charges related to the delivery of 5,000 acre feet of CAP water to general service customers in the Pinal Valley service area. Mr. Reiker sponsors this request (income statement adjustment IS-12) in Section VII of his pre-filed testimony.

5. The Commission approve a CAP surcharge for the purpose of recovering increases in the net per acre foot cost of CAP water (including scheduled increases in M&I capital and delivery charges and the elimination of offsetting payments from the groundwater

savings facility operators), increased costs related to the quantity of CAP water delivered to general service customers, and the recovery of additional deferred CAP M&I capital charges that will become used and useful. Mr. Harris sponsors this request in Section VI of his pre-filed direct testimony.

6. The Commission authorize a new off-site facilities fee for the White Tank service area for the purpose of funding the White Tank Recharge and Recovery Facility. Mr. Harris sponsors this request in Section V of his pre-filed direct testimony.

IV. Aging Infrastructure

Q. WHAT ARE ARIZONA WATER'S OBLIGATIONS AS A PUBLIC SERVICE CORPORATION?

A. As a public service corporation, Arizona Water is obligated by A.R.S. §40-361 to provide service and facilities that are adequate, efficient and reasonable and that promote safety, health, comfort and convenience. This means for example, that Arizona Water is obligated to replace aging infrastructure when such infrastructure can no longer provide adequate, safe or reliable water utility service.

Q. WHAT RESPONSIBILITIES DOES THE COMMISSION PLACE ON PUBLIC SERVICE CORPORATIONS?

A. The Commission requires public service corporations like Arizona Water to comply with safety, adequacy and reliability standards (*See* A.R.S. §40-361), such as complying with safe drinking water standards and providing utility service without unnecessary disruptions.

Q. WHAT FACTORS LIMIT ARIZONA WATER'S ABILITY TO REDUCE WATER LOSS?

A. Even with Arizona Water's concerted efforts to maintain and operate its water distribution systems through prudent management efforts, its water distribution systems (i.e., its water system infrastructure) are reaching, or have reached, a point where maintaining certain portions of those systems is not cost-effective, and replacement of major portions of the water distribution systems is necessary.

As explained by Mr. Schneider in his direct testimony, Arizona Water needs to accelerate the replacement of aging infrastructure in many of its water systems, including its Western Group. But the cost of replacing aging infrastructure is significant and extraordinary, and Arizona Water will not be able to undertake such an effort without the opportunity to recover such costs on a timely basis and the ability to attract capital.

Two factors limit Arizona Water's ability to reduce water loss as it relates to replacing aging infrastructure:

- The high cost of replacing aging infrastructure and lack of available capital.
- Cost recovery - i.e., lack of revenues required to support infrastructure investments.

Q. WITH REGARD TO THE COST OF REPLACING AGING WATER TRANSMISSION AND DISTRIBUTION SYSTEM INFRASTRUCTURE, HOW DOES THE REPLACEMENT COST COMPARE WITH THE PLANT'S ORIGINAL COST?

A. According to an U. S. Environmental Protection Agency ("EPA") report on Deteriorating Buried Infrastructure, the average cost to replace a 6-inch distribution main in 2002 was $100 per foot.[4] Company engineers estimate the cost to replace 6-inch mains in the Western Group at approximately $90 per foot not including additional project specific costs, such as pavement replacement, abandonment costs, etc.[5] This cost is much higher than the original installation cost for water mains in Casa Grande and Coolidge, which in the case of oldest water mains was less than $5 per foot. Arizona Water's other Western Group water systems have similar original and replacement costs. Mr. Schneider also testifies about the cost of replacing aging water transmission and distribution

[4] *See* Exhibit WMG-1
[5] See Mr. Harris' Exhibit JDH-2, Plan of Administration SIB Plant Table

system infrastructure in the Western Group water systems, where infrastructure dates back to as early as 1921.

Q. WHAT AMOUNT OF INFRASTRUCTURE REPLACEMENT FUNDING IS CONTEMPLATED OR NEEDED FOR ARIZONA WATER'S WESTERN GROUP?

A. Arizona Water's engineers have identified $55.8 million of aging and failing water transmission, water distribution mains, and water services that Arizona Water needs to replace in the Western Group water systems where water losses exceed, or have the potential to exceed 10 percent. In fact, Arizona Water's engineers have completed a list of infrastructure replacement projects included in the SIB plant table.[6] This does not include the $66.9 million and $86.7 million of aging and failing infrastructure that Arizona Water needs to replace in its Eastern and Northern Group water systems, respectively.[7]

Q. WHAT STEPS CAN THE COMMISSION TAKE TO HELP ARIZONA WATER REPLACE AGING INFRASTRUCTURE?

A. A SIB surcharge mechanism would help recover the cost of replacing infrastructure and help Arizona Water replace such aging infrastructure, although Arizona Water must be able to raise the necessary capital in order to replace the aging infrastructure.

Q. HAS THE COMMISSION PREVIOUSLY APPROVED A SIB SURCHARGE MECHANISM FOR ARIZONA WATER?

A. Yes. The Commission approved a SIB surcharge mechanism in Decision Nos. 73938 and 74018 as part of Arizona Water's most recent Eastern Group and Northern Group general rate cases, respectively.

V. <u>Arizona Water's Need to Attract Capital</u>

Q. PLEASE DESCRIBE ARIZONA WATER'S NEED TO ATTRACT CAPITAL.

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[6] *See* Mr. Schneider's Direct Testimony and Exhibits

[7] See Eastern Group and Northern Group general rate case Docket Numbers W-01445A-11-0310 and W-01445A-12-0348.

A. Beyond the capital needed to fund "normal" utility plant additions, Arizona Water faces the need to raise significant amounts of capital to replace aging infrastructure and to construct arsenic and nitrate removal facilities for its Western Group. For example, Arizona Water needs to raise capital to fund the following utility plant additions in its Western Group, as discussed in Mr. Schneider's pre-filed direct testimony, and to meet similar capital needs for Arizona Water's Eastern and Northern Groups:

Western Group - Extraordinary Capital Needs

• Aging Water Infrastructure	$55.8 million
• Arsenic Removal Facilities	$3.4 million
• Nitrate Removal Facilities	$18.9 million
Subtotal (Western Group):	$78.1 million

Eastern Group - Extraordinary Capital Needs[8]

• Aging Water Infrastructure	$66.9 million
• Arsenic Removal Facilities	$1.8 million
Subtotal (Eastern Group):	$68.7 million

Northern Group - Extraordinary Capital Needs[9]

• Aging Water Infrastructure	$84.2 million
• Arsenic Removal Facilities	$2.5 million
Subtotal (Northern Group):	$86.7 million
Total Company:	$233.5 million

Q. ARE THESE AMOUNTS OF CAPITAL INVESTMENTS NORMAL OR ARE THEY EXTRAORDINARY?

A. No, these amounts of capital investments are not normal, but are extraordinary for the Western Group, Eastern Group and Northern Group as well as for the

[8] See Eastern Group Direct Testimony - Fredrick Schneider - Appendix 9.5 in Exhibit FKS-13 and Exhibits FKS-14 through FKS-16, Docket W-01445A-11-0310.

[9] See Northern Group Direct Testimony - Fredrick Schneider - Appendix 11.5 in Exhibit FKS-19 and Exhibits FKS-21 through FKS-25, Docket W-01445A-12-0348.

company as a whole. This means that Arizona Water must be able to attract the necessary capital to replace the Western Group's aging infrastructure and construct arsenic and nitrate removal facilities, while also recognizing significant capital needs for its Eastern and Northern Groups.

Declining Sales

Q. HOW DO DECLINING SALES AFFECT ARIZONA WATER'S FINANCES AND ITS ABILITY TO ATTRACT CAPITAL?

A. The Commission typically sets rates based on test year sales volumes adjusted only to reflect customer growth. When sales fall short of test year sales volumes, as they have for many years, revenues also fall short. As Mr. Reiker explains in Section VIII of his pre-filed direct testimony, because rates are traditionally set to recover only the cost of service and no more, and a significant portion of the Company's fixed costs are recovered through the quantity rate, the Company will not recover its cost of service when customers reduce the amount of water they use. This shortfall is magnified under increasing-block, or "tiered" rates, where declines in water usage generally occur in the higher tiers. To the extent revenues fall short of costs, Arizona Water has less capital available for constructing utility plant, as well as covering its operating and maintenance expenses.

As an example of just how much sales volumes have fallen short, from 1996 to 2014, Arizona Water's Western Group of water systems' average annual sales per residential customer fell as follows:

- Pinal Valley - Sales fell 40% (From 174,000 gallons to 106,000 gallons)
- White Tank - Sales fell 30% (From 194,000 gallons to 135,000 gallons)
- Ajo - Sales fell 43% (From 82,000 gallons to 47,000 gallons)

From 1996 to 2014, Arizona Water filed three general rate cases for its Western Group. On average, sales declined 10% to 15% during each rate case cycle. However, because these declines have primarily occurred in the higher

rate tiers, the effect on revenue shortfall has been magnified. As a result, Arizona Water has neither recovered its cost of service nor earned its authorized return on rate base, which has led to less internally generated funds available to construct utility plant, replace aging infrastructure, or construct arsenic and nitrate removal facilities. This fact poses an extraordinary business risk to Arizona Water that the Commission should factor into the authorized ROE in this proceeding.

Rate design

Q. HOW DOES RATE DESIGN AFFECT ARIZONA WATER'S BUSINESS RISK?

A. Between 70% and 80% of Arizona Water's total operating costs are fixed. However, Arizona Water presently collects only about 40% of its revenues in the Pinal Valley service area from fixed monthly service charges. The balance of the Company's fixed costs are recovered from quantity rates, with 43% of quantity revenues collected from the highest rate tier, where customers are most likely to curtail water usage. Arizona Water has similar rate designs and revenue shortfalls in each of its other ten separately tariffed service areas. As a result, this rate design, coupled with the declines in usage described above, increases the risk that Arizona Water will continue to under-recover its cost of service and thus have less internally-generated funds to construct utility plant. The risk of under-recovery is yet another factor that the Commission should consider when determining the Company's authorized ROE in this proceeding.

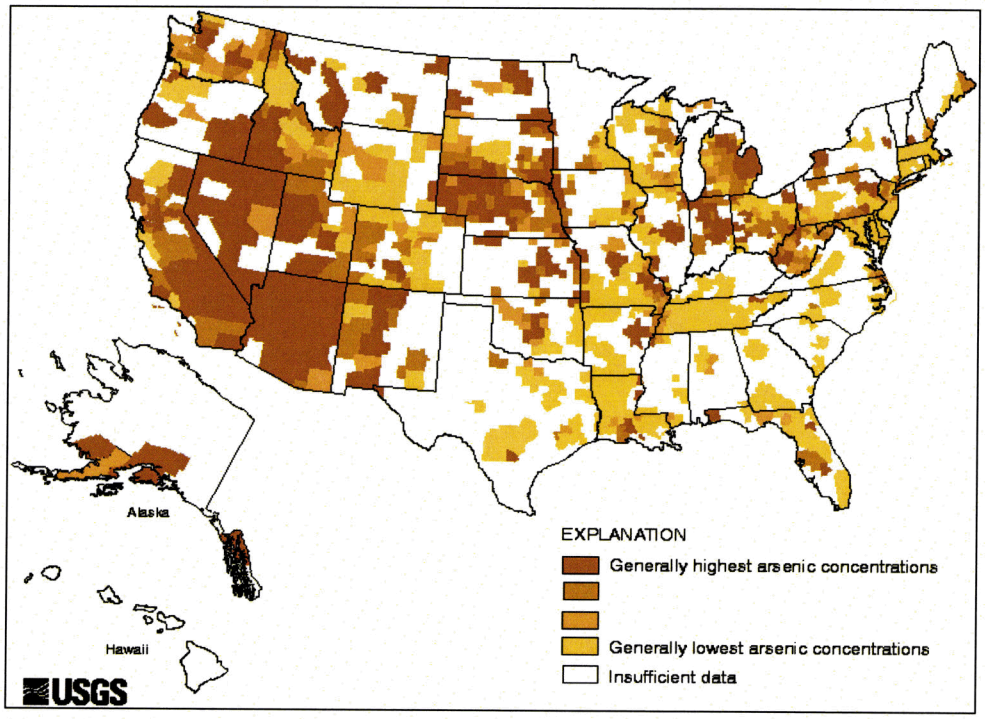
Safe Drinking Water Standards - Arsenic and Nitrate

Q. HOW DO SAFE DRINKING WATER STANDARDS AFFECT ARIZONA WATER'S BUSINESS RISK?

A. Although the Safe Drinking Water Act applies to all community water systems, Arizona Water's Western Group has a much greater prevalence of arsenic and nitrates in drinking water supplies than water utilities in other parts of the country, and even in other parts of Arizona. For example, when the EPA first proposed a

new drinking water standard for arsenic, the United States Geological Survey published maps showing the prevalence and levels of naturally occurring arsenic in groundwater. Arizona was one of several states that had extensive areas where arsenic was present in the groundwater in high concentrations. The map below shows the concentration of arsenic in Arizona compared to the rest of the country. You will note that almost the entire state of Arizona is listed as having "Generally highest arsenic concentrations".

Figure 5-1 Concentration of Arsenic in Arizona in Comparison to Other States



Unfortunately, the new safe drinking water standard for arsenic has affected Arizona Water on a scale that far surpasses any other single water provider in Arizona. Since 2003, Arizona Water has constructed 26 arsenic removal facilities, and it plans to construct at least three more in the next 24 months, for a total capital investment in excess of $50 million.

Q. YOU ALSO TESTIFIED ABOUT NITRATES. HOW DO NITRATES AFFECT ARIZONA WATER'S OPERATIONS AND FINANCES?

A. Nitrates potentially pose an even greater risk to Arizona Water than arsenic. The Company's Pinal Valley and White Tank service areas have high levels of nitrates in local groundwater supplies and the cost of treatment to remove nitrates far exceeds the already high cost to remove arsenic. In the Western Group, nitrate concentrations present in the Company's groundwater supplies have required the construction of three nitrate removal facilities; one in White Tank, one in Pinal Valley, and one combination nitrate/arsenic treatment facility in Stanfield.

Q. WHAT EVIDENCE DO YOU HAVE THAT THE WHITE TANK AND PINAL VALLEY SERVICE AREAS HAVE HIGH LEVELS OF NITRATES IN THE LOCAL GROUNDWATER?

A. Reports from ADWR and ADEQ show that nitrates in native groundwater exceed safe drinking water standards in the areas surrounding Arizona Water's Pinal Valley, White Tank and Stanfield service areas. Figures 5-2 and 5-3 below show the prevalence of nitrates in these areas in the Pinal and Phoenix AMAs, respectively.[10] ADEQ published the results of a baseline study of ambient groundwater quality for the Pinal AMA in 2007 which showed that nitrate levels in 27% of the sites sampled exceeded the nitrate maximum contaminant level ("MCL").[11] Also, Arizona Water's own water quality testing records for its White Tank, Pinal Valley and Stanfield service areas show that nitrate levels in groundwater are increasing. Mr. Schneider addresses this in greater detail in his pre-filed direct testimony.

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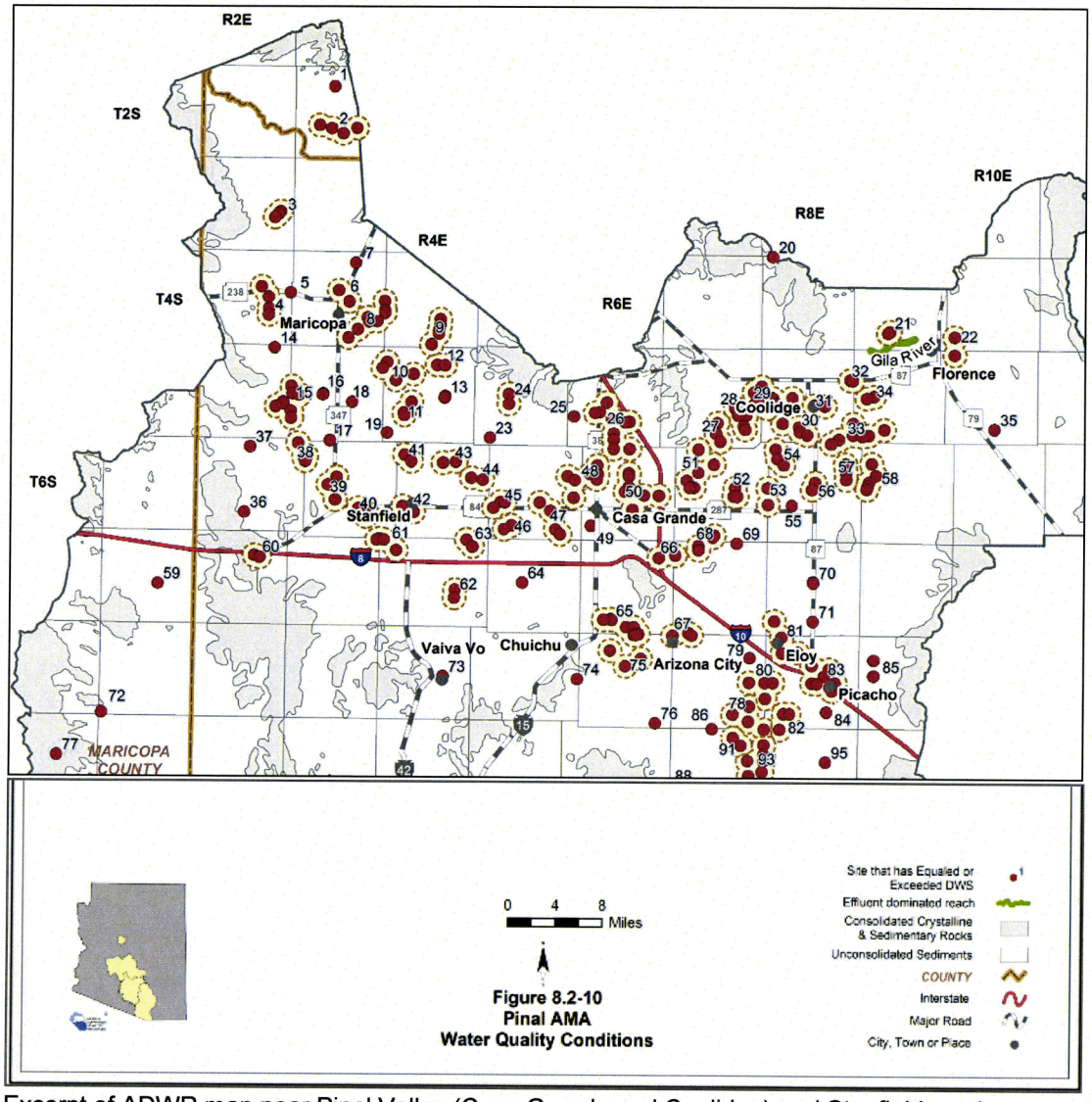
[10] Excerpts of Maps published by ADWR for the Phoenix and Pinal AMAs on the ADWR website.
[11] See Exhibit WMG-2, ADEQ Fact Sheet, *Ambient Groundwater Quality of the Pinal Active Management Area: A 2005-06 Baseline Study - October 2007*

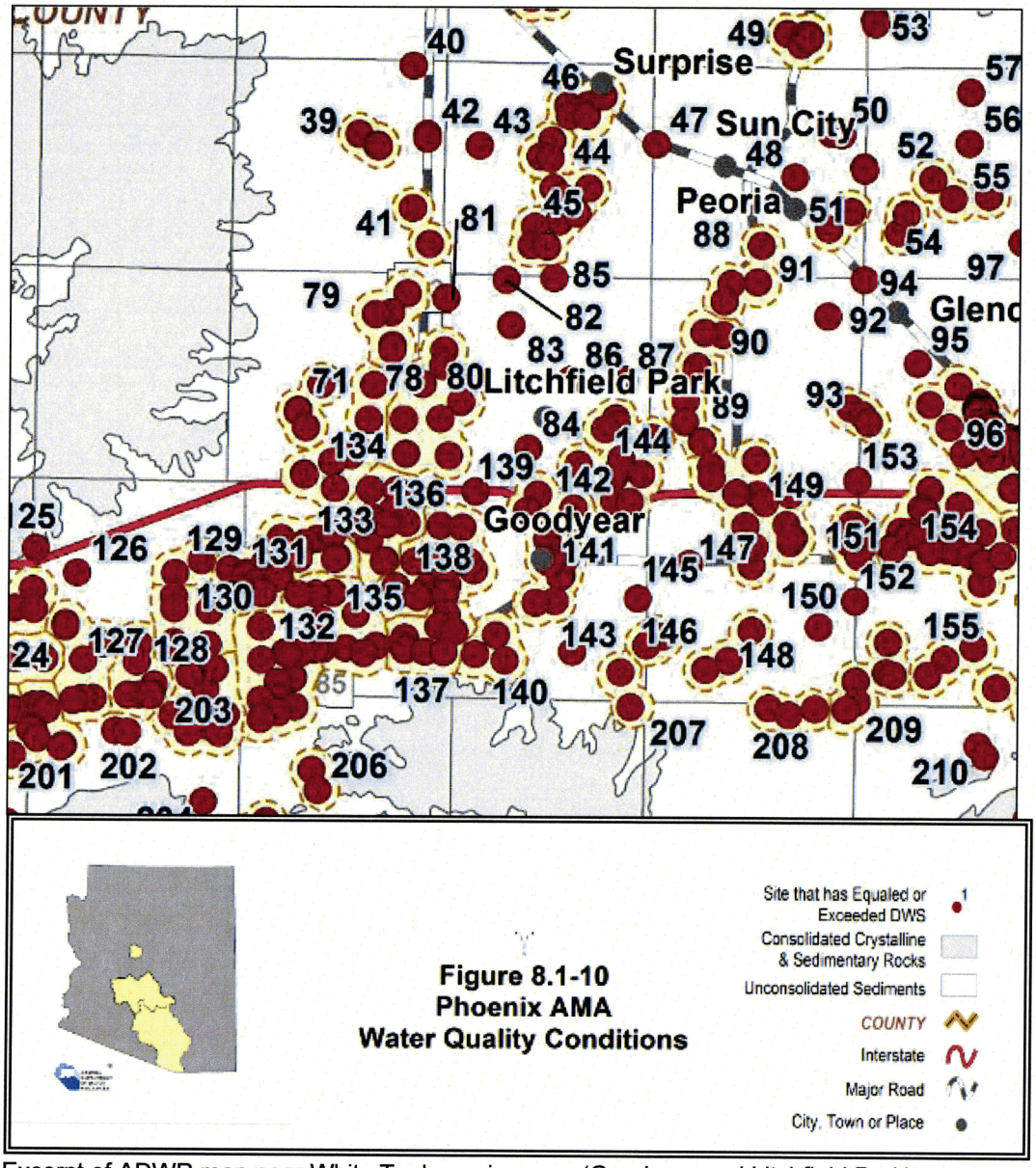
Figure 5-2 Prevalence of Nitrates in the Pinal AMA



Excerpt of ADWR map near Pinal Valley (Casa Grande and Coolidge) and Stanfield service areas.

WMG:JRC 8/20/15

Figure 5-3 Prevalence of Nitrates in the Phoenix AMA



Excerpt of ADWR map near White Tank service area (Goodyear and Litchfield Park).

Q. WHY ARE NITRATES SUCH A CONCERN WHEN THE VAST MAJORITY OF TREATMENT FACILITIES INVOLVE ARSENIC REMOVAL?

A. There are two important factors that distinguish nitrates from arsenic. First, nitrates are an acute contaminant that trigger far reaching regulatory requirements when groundwater supplies have nitrate concentrations greater than the EPA's MCL. Second, the cost to design, construct, operate and

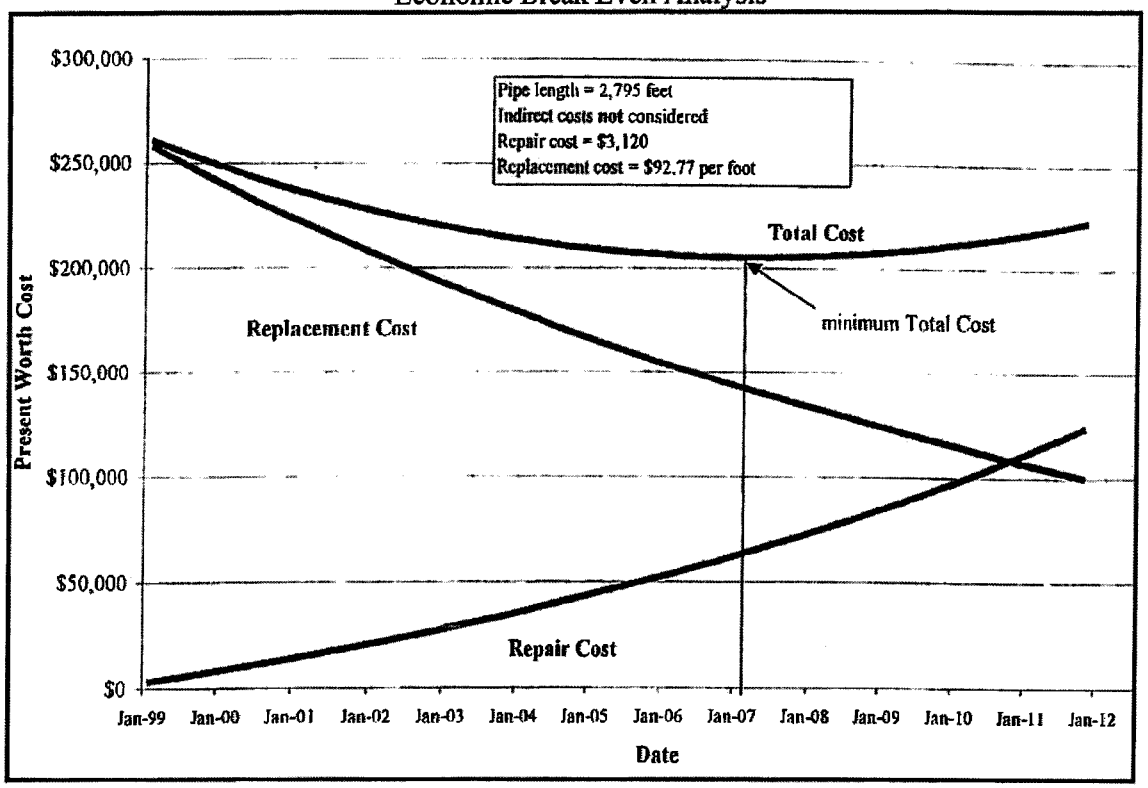
United States
Environmental Protection
Agency

Office of Water (4601M)
Office of Ground Water and Drinking Water
Distribution System Issue Paper

Deteriorating Buried Infrastructure Management Challenges and Strategies

May, 2002

Exhibit No. 5
Economic Break Even Analysis



This is an extraordinary case due to the unusually high number of main breaks. Most water utilities are not experiencing main breaks at such a rate and cannot economically justify replacement over repair. It also is important to note that the economic model is based on standard engineering economics, and does not incorporate financial factors such as taxes on capital investment and depreciation. If these additional factors were considered, the analysis would slant further in favor of repairing instead of replacing mains.

Consider the following example where actual direct costs for replacement and repair are compared. Average replacement costs are approximately $100/foot for 6-inch main. Therefore, for a 1,000-foot main, total replacement costs would be approximately $100,000. If the utility expects to recover that investment, the annualized revenue requirement or cost would be $10,000 to $15,000, depending on financing cost or economic regulation (investor-owned utilities). Repair costs on the main are approximately $3,000 per break. Consequently, in order to justify replacing that pipe purely from a cost standpoint, the main must experience breaks at a rate of approximately 3 to 5 per year. A rate of 4 breaks per year is a break every 3 months for a length of pipe slightly longer than a city block. Such a high break rate is very unlikely and certainly would not be tolerated by customers subjected to such frequent service and traffic disruptions. Therefore, other factors such as the stakeholder and liability costs associated with main breaks must also be considered.

ADEQ
Arizona Department of Environmental Quality
Janet Napolitano, Governor
Stephen A. Owens, ADEQ Director

FACT SHEET

Ambient Groundwater Quality of the Pinal Active Management Area: A 2005-06 Baseline Study – October 2007

INTRODUCTION

In 2005-06, a baseline groundwater quality study of the Pinal Active Management Area (AMA) was conducted by the Arizona Department of Environmental Quality (ADEQ) Ambient Groundwater Monitoring Program. ADEQ conducts monitoring pursuant to Arizona Revised Statutes §49-225. This fact sheet is a synopsis of the ADEQ Open File Report OFR 08-01.[1]

The Pinal AMA is located within Pinal, Pima and Maricopa counties in south-central Arizona between Phoenix and Tucson. Created by the Arizona Groundwater Management Act of 1980, the Arizona Department of Water Resources (ADWR) is charged with managing the Pinal AMA's diminishing groundwater resources.[2] The Pinal AMA covers approximately 4,100 square miles and contains five incorporated communities: Casa Grande, Coolidge, Eloy, Florence and Maricopa. Approximately half of the Pinal AMA (2,100 square miles) is composed of Native American lands including the Ak-Chin Indian Community and portions of the Gila River Indian Community and the Tohono O'odham Nation (Map 1).[2] The Pinal AMA is largely rural, but both agricultural and desert land in the area is rapidly transitioning into urban land use (Figure 1).

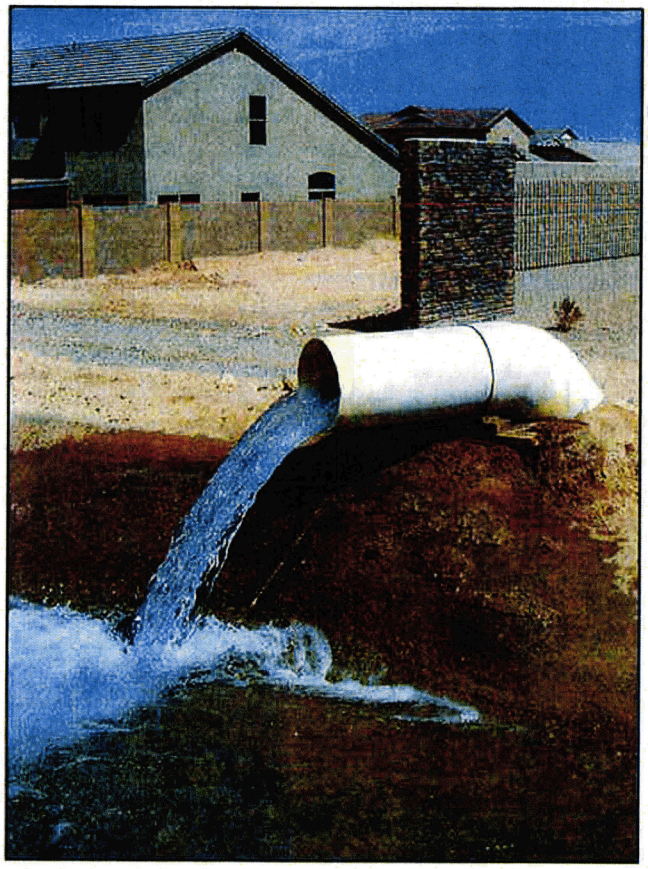


Figure 1 – A housing development near the city of Maricopa encroaches upon an irrigation well operated by the Maricopa-Stanfield Irrigation and Drainage District. In many areas of the Pinal AMA, farmland is rapidly transitioning to urban land uses.

HYDROLOGY

The Gila River and Santa Cruz River are the major drainages in the Pinal AMA, though both are typically dry. Except during floods, the entire flow of the Gila River is diverted northeast of Florence for irrigation use (Figure 2) while the Santa Cruz River has only a limited stretch of flow maintained by upstream wastewater discharges. There is no recorded natural perennial flow in any of the other gauged drainages in the AMA.[3]

Basin sediments in the Pinal AMA consist primarily of alluvial fill extending up to several thousand feet in thickness.[4] Prior studies have classified these sediments in various ways. Three water zones were defined in the Eloy and Maricopa-Stanfield sub-basins by an ADWR study: a lower main water zone, upper main water zone, and local water zones.[3] The lower main water zone is the deepest and most extensive with the majority of recharge occurring from natural sources. Above it is the upper main water zone, the primary source for well production. Recharge to this zone comes from natural sources as well as leakage from unlined irrigation canals and percolation from excess irrigation water applied to crops.[3] There are at least three shallow local water zones perched on fine-grained deposits which receive most of their recharge from human activities such as leakage from

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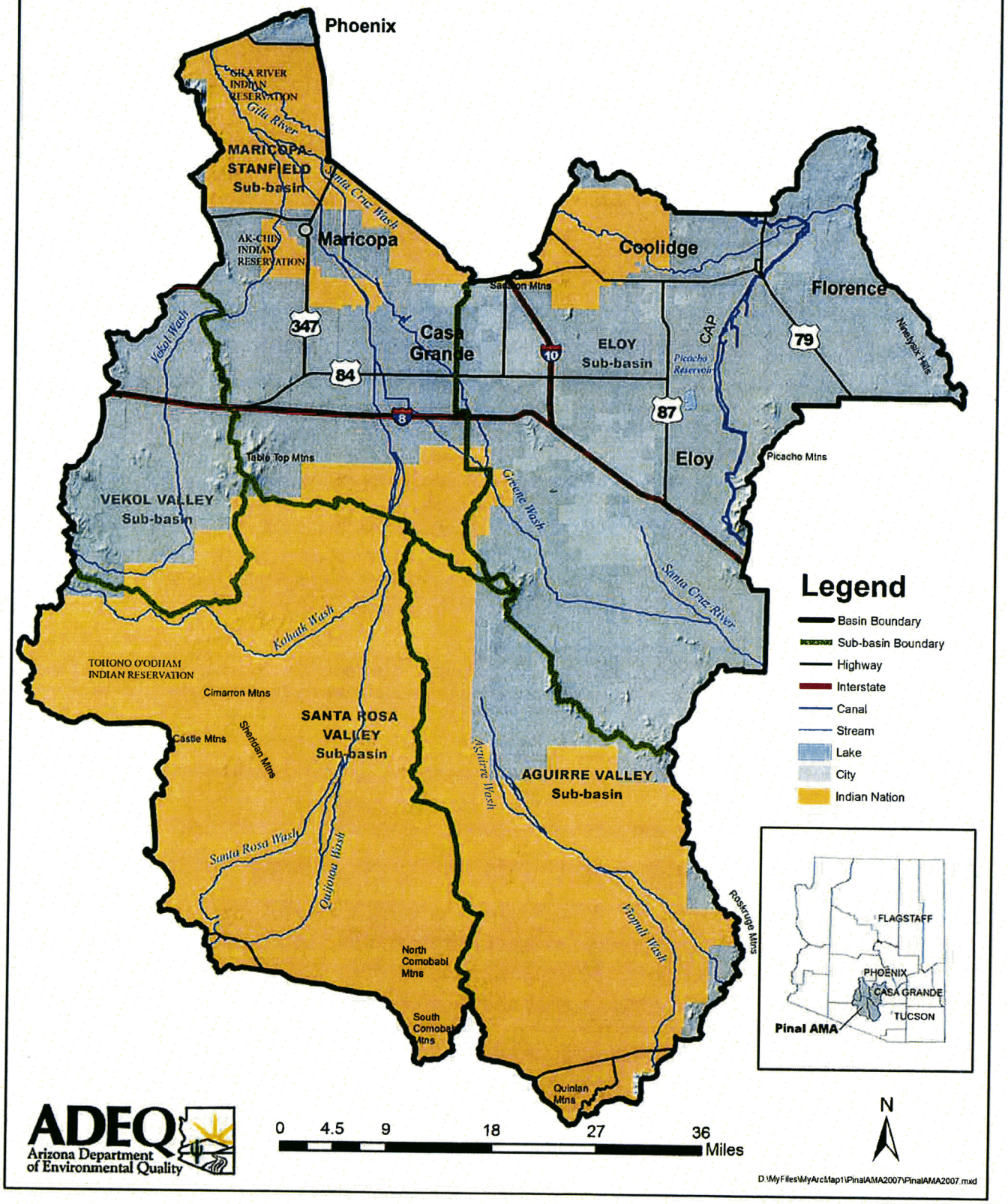
Map 1 - Pinal AMA



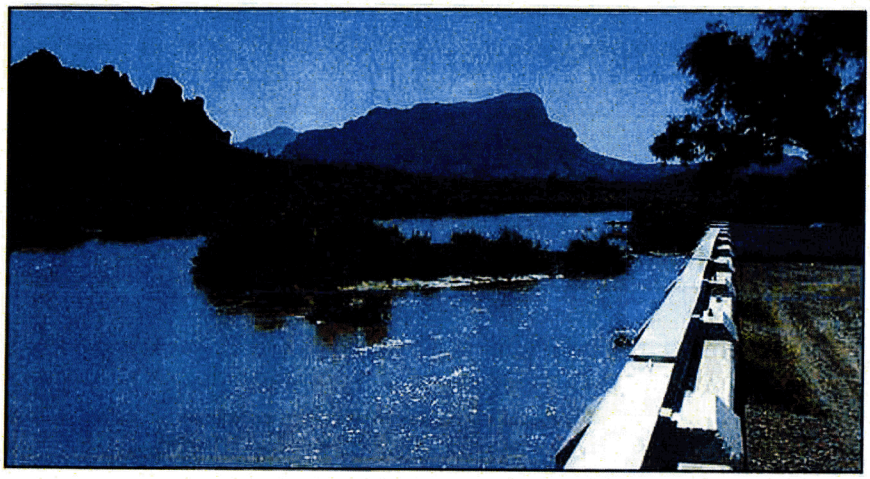


Figure 2 – The Ashurst-Hayden Dam on the Gila River northeast of Florence, built in 1922, diverts the flow of the Gila River for irrigation use. The importation of this surface water for irrigation has helped maintain fairly shallow groundwater depths in the northern part of the Eloy sub-basin.

unlined irrigation canals and percolation from excess irrigation water applied to crops.[3]

The Pinal AMA has been divided into five sub-basins by ADWR: Eloy, Maricopa-Stanfield, Aguirre Valley, Santa Rosa Valley and Vekol Valley (Map 1).[4] The Eloy sub-basin is further divided into northern and southern portions by a groundwater ridge that lies approximately along the Casa Grande Canal alignment.[3]

WATER DEVELOPMENT

The vast majority of water use in the Pinal AMA occurs in the two northern sub-basins: Eloy and Maricopa-Stanfield.[2] Groundwater is the primary source for municipal and domestic supply.

Both surface water and groundwater are used for non-Indian irrigated agriculture, which constituted 75 percent of water usage in the Pinal AMA in 1995.[2] The largest water users are four irrigation and drainage districts: the Central Arizona (CAIDD), Hohokam (HIDD), Maricopa-Stanfield (MSIDD), and San Carlos (SCIDD).[2] The SCIDD and HIDD are located in the Eloy sub-basin north of the groundwater ridge, the CAIDD is located in the Eloy sub-basin south of the groundwater ridge, and MSIDD is located in the Maricopa-Stanfield sub-basin.

Although the Gila River has been diverted for agricultural use since the 1860s in the area, the SCIDD has used flow from this waterway supplemented with limited groundwater pumping since its formation in the 1920s for irrigation.[2] In contrast the CAIDD, HIDD and MSIDD were dependent on groundwater (Figure 3) for irrigation. Since 1987, these three irrigation districts have received and distributed Colorado River water provided through the Central Arizona Project though groundwater is still pumped to supplement the water supply (Figure 4).[2]

METHODS OF INVESTIGATION

To characterize regional groundwater quality, samples were collected from 86 sites located on non-Indian lands. Roughly two-thirds of the sampled sites were irrigation wells using turbine pumps with the remainder mostly domestic wells using submersible pumps. Among sub-basins, the majority of groundwater samples were collected in Eloy (50 sites) and Maricopa-Stanfield (27 sites) with the remainder in Aguirre Valley (5 sites) and Vekol Valley (4 sites). No sites were sampled in the Santa Rosa Valley sub-basin that consists almost entirely of Native American land.

All sites were sampled for inorganic constituents and oxygen and deuterium isotopes. Samples for radon (41 sites), radiochemistry (21 sites) and organics (semi-volatile compounds, chlorinated pesticides and

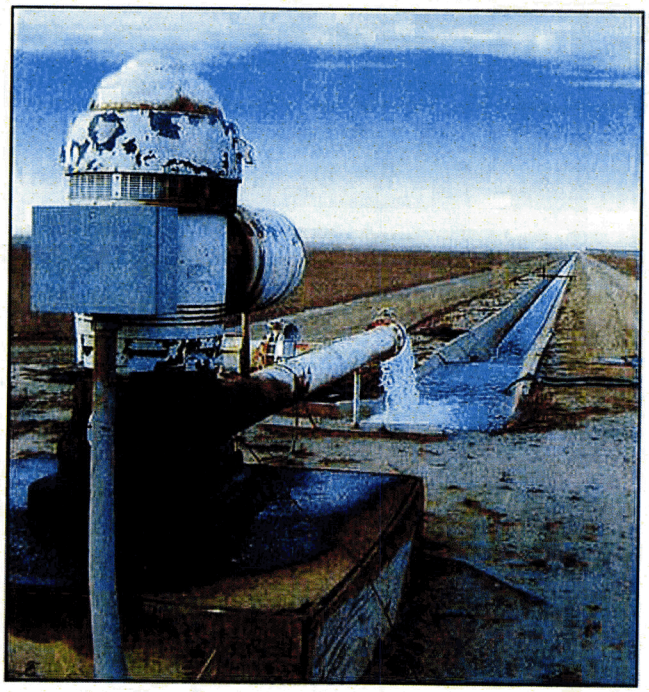


Figure 3 – Groundwater from a 1,200-foot-deep irrigation well operated by the Central Arizona Irrigation and Drainage District supplements Colorado River water flowing in the Central Main Canal. Water from the canal irrigates crops, mostly upland cotton, in the Santa Cruz Flats south of the town of Eloy.

Figure 4 – Colorado River water now supplements groundwater for irrigation needs in the Maricopa-Stanfield Irrigation and Drainage District. This irrigation district has a much greater depth to groundwater than the San Carlos Irrigation and Drainage District because, previous to 1987, it solely relied upon groundwater for irrigation needs.

organophosphorus pesticides) (14 sites) were also collected at selected sites.

Sampling protocol followed the *ADEQ Quality Assurance Project Plan*.[5] The effects of sampling equipment and procedures were not found to be significant based on seven standard quality assurance/quality control tests.

WATER QUALITY SAMPLING RESULTS

The analytical results were compared with Environmental Protection Agency (EPA) Safe Drinking Water (SDW) standards. EPA SDW Primary Maximum Contaminant Levels (MCLs) are enforceable, health-based water quality standards that public systems must meet when supplying water to their customers. Primary MCLs are based on a daily lifetime consumption of two liters of water. Of the 86 sites sampled, 60 sites (70 percent) had concentrations of at least one constituent that exceeded a Primary MCL (Map 2). Health-based exceedances included arsenic (33 sites), fluoride (7 sites), gross alpha (5 sites), nitrate (23 sites), and uranium (2 sites).

EPA SDW Secondary MCLs are unenforceable, aesthetics-based water quality guidelines for public water systems. Water with Secondary MCLs may be unpleasant to drink and/or create unwanted cosmetic or laundry effects but is not considered a health concern. At 59 sites (69 percent), concentrations of at least one constituent exceeded a Secondary MCL (Map 2). Aesthetics-based exceedances included chloride (25 sites), fluoride (19 sites), iron (2 sites), pH-field (8 sites), sulfate (26 sites) and total dissolved solids or TDS (50 sites).

There were no detections of any semi-volatile compounds, chlorinated pesticides or organophosphorus pesticides in the 14 organic samples. Two radon samples exceeded the proposed EPA SDW standard of 4,000 picocuries per liter.

GROUNDWATER COMPOSITION

Analytical results indicated that groundwater in the Pinal AMA was generally *slightly alkaline*, *fresh*, and *hard* to *very hard* based on pH values, TDS and hardness concentrations. Groundwater chemistry varied widely with samples from the upper main water zone tending to be of calcium-sulfate/chloride composition while samples from the lower main water zone were generally of a sodium-bicarbonate composition. Among trace elements, only arsenic, boron and fluoride were detected at more than 20 percent of sample sites. Nitrate (as nitrogen) was often elevated with 73 percent of sample sites having concentrations greater than >3.0 milligrams per liter suggesting influence by human activities.

GROUNDWATER QUALITY PATTERNS

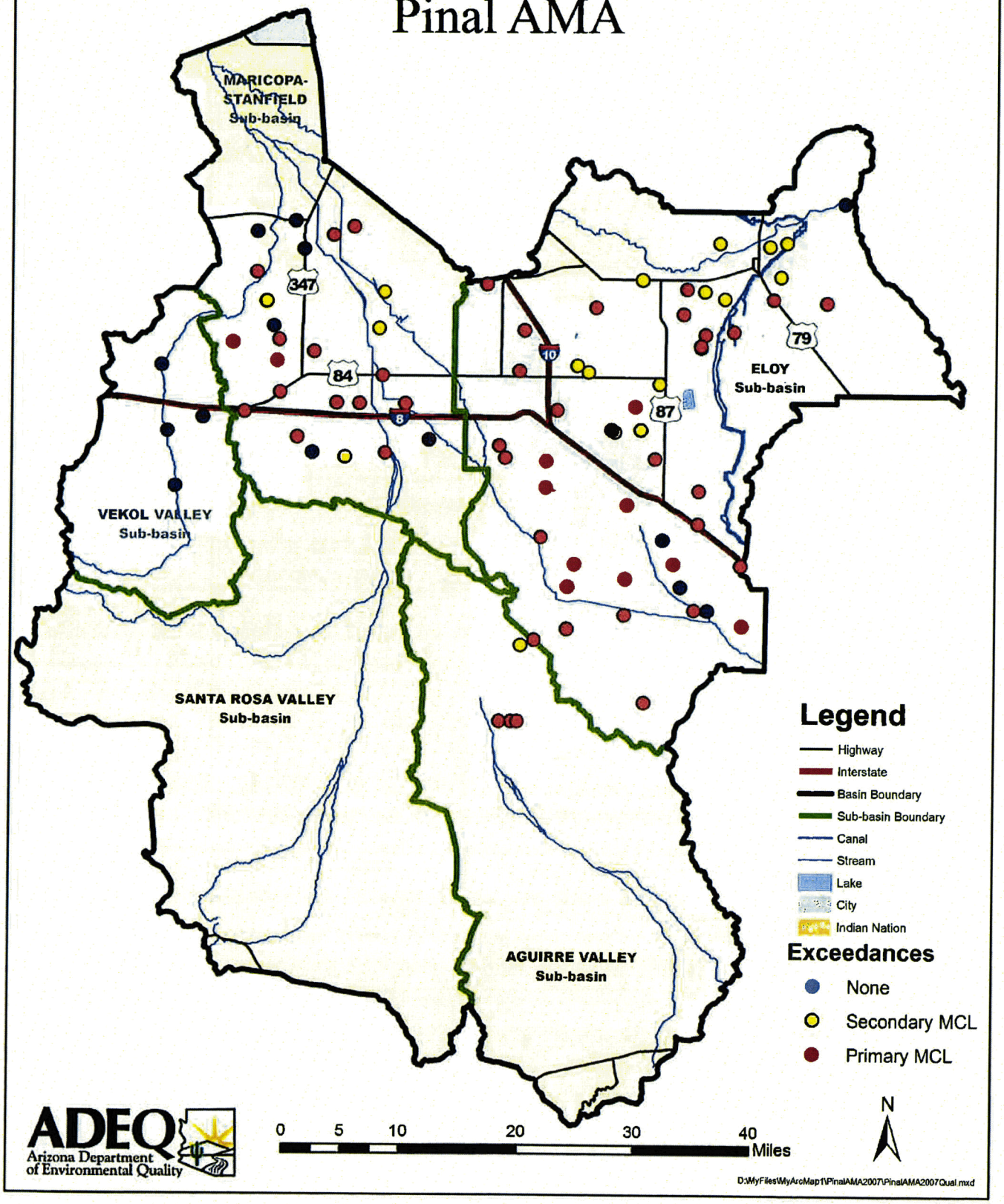
Statistically-significant patterns were found among groundwater sub-basins, land uses, irrigation districts and water zones (Kruskal-Wallis test with Tukey test, $p \leq 0.05$).

Differences Among Sub-Basins - Among the four sub-basins sampled, temperature was higher in Aguirre Valley than in Eloy, fluoride and pH-field were higher in Maricopa-Stanfield than in Eloy, and oxygen and deuterium were higher in both Maricopa-Stanfield and Vekol Valley than in Eloy.

Comparing the Eloy and Maricopa-Stanfield sub-basins - where almost 90 percent of the samples were collected - revealed additional significant differences. Groundwater depth, temperature, pH-field, pH-lab, sodium, fluoride, radon, gross beta, oxygen and deuterium were higher in Maricopa-Stanfield than in Eloy. Calcium and boron were higher in Eloy than in Maricopa-Stanfield.

Differences Between Land Uses - Within the Eloy and Maricopa-Stanfield sub-basins, well depth, TDS,

Map 2 - Water Quality Status
Pinal AMA



hardness, calcium, magnesium, potassium, chloride and sulfate were higher in the agricultural areas than in the non-agricultural areas. In contrast, temperature, pH-field, pH-lab and fluoride (Figure 5) were significantly higher in non-agricultural areas than in agricultural areas.

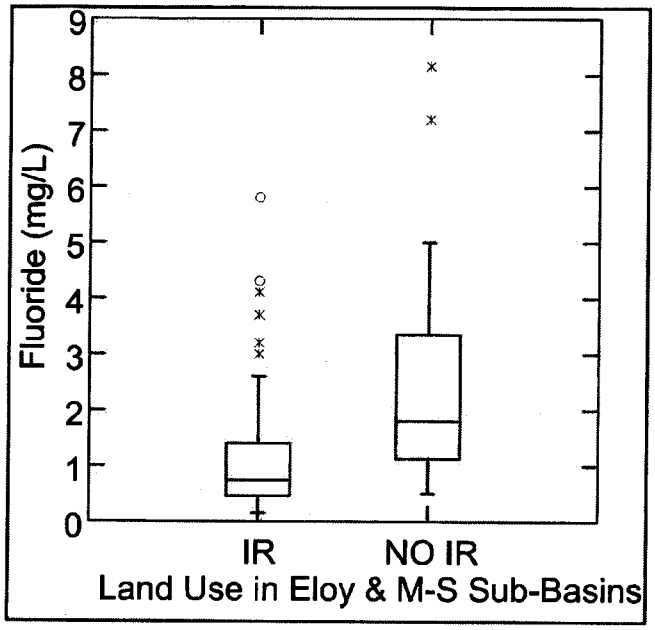


Figure 5 – Fluoride concentrations are significantly higher in non-irrigated areas than in irrigated areas within the Eloy and Maricopa-Stanfield sub-basins (Kruskal-Wallis test, $p \leq 0.05$). In the box plot diagram, the central vertical line marks the median, the length of the box shows the range within which the central 50 percent of values fall and the box edges are the first and third quartiles. The asterisks represent "outside values" and empty circles represent "far outside values".

Differences Among Irrigation Districts - Analytical results were compared among groundwater samples collected in three irrigation districts: CAIDD, MSIDD and SCIDD. Since the HIDD and SCIDD have somewhat intermingled boundaries and both are north of the groundwater ridge dividing the Eloy sub-basin, the samples collected in the HIDD were combined with those collected in the SCIDD to reflect conditions in the northern section of the Eloy sub-basin.[3]

Groundwater depth, temperature, pH-field and pH-lab were higher in the CAIDD and MSIDD than in SCIDD. TDS, SC-field, SC-lab, hardness (Figure 6), calcium, magnesium, potassium, chloride, sulfate, TKN and boron were higher in the SCIDD than in CAIDD and MSIDD. Unique patterns were found with seven constituents: sodium and oxygen (MSIDD & SCIDD > CAIDD), bicarbonate (SCIDD > CAIDD), arsenic and radon (MSIDD > SCIDD), fluoride (MSIDD > CAIDD) and deuterium (MSIDD > CAIDD & SCIDD).

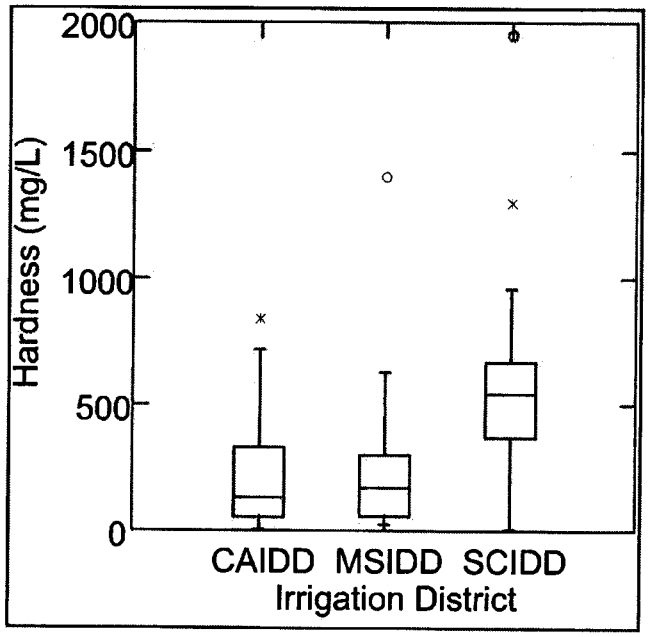


Figure 6 – Among irrigation districts, hardness concentrations are significantly higher in the San Carlos than in either Central Arizona or Maricopa-Stanfield (Kruskal-Wallis with Tukey test, $p \leq 0.05$). The San Carlos district appears to have been more heavily impacted by saline recharge from irrigation applications because of the short distance this water has to percolate before contacting shallow groundwater.[6]

Differences Among Groundwater Zones - Analytical results were compared among groundwater samples collected in the three water zones within the Eloy and Maricopa-Stanfield sub-basins: lower main water zone, upper main water zone and local water zones.

Well depth, groundwater depth, temperature, pH-field and pH-lab were higher in the lower main water zone than in upper and local water zones. TDS, SC-field, SC-lab, hardness, calcium, magnesium, sodium, chloride, sulfate and nitrate (Figure 7) were higher in the upper and local water zones than in the lower main water zones. Potassium, TKN and boron were higher in the upper main water zone than in the lower main water zone.

CONCLUSIONS

Of the water quality patterns found, the most numerous are those involving groundwater zones and irrigation districts. Several factors contribute to these water quality patterns, including evaporate deposits such as gypsum, salt and gypsiferous mudstone, but their specific impacts are difficult to quantify.[3] The most important factor however, appears to be the effect of salts and calcite concentrated by evaporation during irrigation and then recharged to the upper main or local water zones.[6]

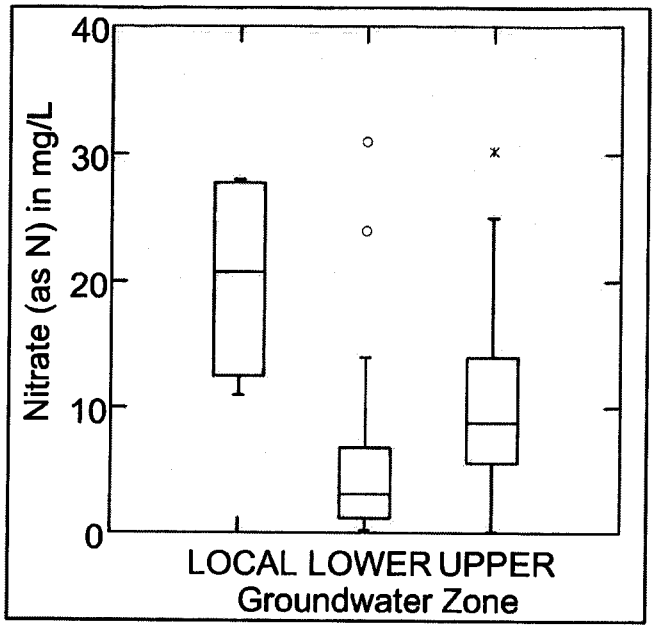


Figure 7 – Nitrate concentrations are significantly higher in the local and upper water zones than in the lower water zone (Kruskal-Wallis with Tukey test, $p \leq 0.05$). The elevated nitrate concentrations found in the local and upper water zones are likely the result of several sources, including saline recharge from irrigation that also carries nitrates as a result of nitrogen fertilizer applied to crops.[6]

Since water from the Gila River is the main source of irrigation for the SCIDD, its importation maintains relatively shallow groundwater levels in this irrigation district. Thus, there is little lag time before the highly saline recharge from irrigation applications percolates to the aquifer and impacts groundwater quality in the SCIDD.

In contrast, before 1987, the CAIDD and the MSIDD used groundwater as the sole source of irrigation water. This has led to declining groundwater depths in these districts, but has probably protected the groundwater from the full impacts of saline recharge from irrigation applications because of the increased distance necessary for this water to percolate to the aquifer.[6]

This ADEQ study revealed that 70 percent of the 86 sites sampled did not meet health-based Primary MCL water quality standards. Previous assessments of groundwater quality in the Pinal AMA indicated that, aside from a few wells having high concentrations of nitrate and fluoride, there were no major issues affecting water quality.[2] Much of the disparity between these two assessments can be attributed to the lowering of the arsenic standard from 0.05 mg/l to 0.01 mg/l in 2006, a change that resulted in exceedances at 33 sites—instead of one site—for arsenic in the ADEQ study.

Another important facet of this study revealed no significant differences involving nitrate concentrations between non-irrigated portions of the Eloy and Maricopa-Stanfield sub-basins and areas in irrigated agricultural production. Previous assessments had characterized the non-irrigated portions of these sub-basins as having lower contaminant levels.[4] This finding appears to indicate that nitrate concentrations are the result of both agricultural sources, such as crop fertilizer and confined animal feeding operations, and non-agricultural sources such as on-site wastewater septic systems.

ADEQ CONTACTS

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ADEQ's TDD line: (602) 771-4829

Web site:
azdeq.gov/environ/water/assessment/ambient.html

Maps by Steve Callaway, senior hydrologist

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ANNUAL REPORT
Water

FOR YEAR ENDING

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Company Name:	Arizona Water Company
Year Ended:	12/31/2014

UTILITY PLANT IN SERVICE

Acct. No.	DESCRIPTION	Original Cost (OC)	Accumulated Depreciation (AD) *	O.C.L.D. (OC LESS AD)
301	Intangible-Organization	651		
302	Intangible-Franchises	120,095		
303	Intangible-Miscellaneous	1,965,876		
310.10	Source of Supply-Water Rights	4,414,231		
310.30	Source of Supply-Land-Other-Wells	1,253,303		
314	Source of Supply-Wells	25,631,924		
320	Pumping-Land	86,789		
321	Pumping-Structures and Improvements	1,387,771		
325	Pumping-Electrical Equipment	36,541,747		
328	Pumping-Gas Engine Equipment	209,007		
330	Water Treatment-Land	683,529		
331	Water Treatment-Structures and Improvements	2,441,230		
332	Water Treatment-Equipment	36,262,720		
340	Transmission and Distribution-Land	2,817,984		
341	Transmission and Distribution-Structures and Improvements	1,333		
342	Transmission and Distribution-Storage Tanks	16,085,658		
343	Transmission and Distribution-Mains	208,817,385		
344	Transmission and Distribution-Fire Sprinklers	59,215,119		
345	Transmission and Distribution-Services	5,145,179		
346	Transmission and Distribution-Meters	8,475,197		
348	Transmission and Distribution-Hydrants	19,097,611		
389	General-Land	232,377		
390	General-Structures and Improvements	2,323,422		
391	General-Office Furniture and Equipment	7,095,452		
393	General-Stores Equipment	99,942		
394	General-Tools, Shop and Garage Equipment	1,748,172		
395	General-Laboratory Equipment	329,123		
396	General-Power Operated Equipment	273,975		
397	General-Communication Equipment	6,415,927		
398	General-Miscellaneous Equipment	486,561		
	Totals	449,659,290	131,047,901	318,611,389
	LEASEHOLD IMPROVEMENTS			
390	General-Structures and Improvements	2,906,389	2,003,356	903,033
	TOTALS	452,565,679	133,051,257	319,514,422

* Depreciation is computed on a straight-line composite basis based on property classifications ranging from 1.79% to 6.67%. Leasehold improvements are amortized on a straight line basis over the life of the lease.

Company Name:	Arizona Water Company
Year Ended:	12/31/2014

COMPARATIVE STATEMENT OF INCOME AND EXPENSE

Acct. No.	OPERATING REVENUES	PRIOR YEAR	CURRENT YEAR
461	Metered Water Revenue	$58,171,295	$60,378,864
462	Fire Protection Revenue	293,075	305,439
470	Late Charges	163,971	172,382
471	Miscellaneous Service Revenues	2,359,148	2,545,139
472	Rents from Water Property	4,136	3,186
474	Other Water Revenues	533,104	560,765
	TOTAL OPERATING REVENUES	$61,524,729	$63,965,775
	OPERATING EXPENSES		
600	Source of Supply Operation-Supervision and Engineering	$103,990	$88,424
601	Source of Supply Operation-Labor and Expenses	1,620	2,000
602	Source of Supply Operation-Purchased Water	1,286,100	1,440,514
603	Source of Supply Operation-Miscellaneous	81,261	78,647
610	Source of Supply Maintenance-Supervision and Engineering	62,676	56,705
614	Source of Supply Maintenance-Wells and Springs	4,951	9,716
620	Pumping Operation-Supervision and Engineering	68,250	73,799
623	Pumping Operation-Purchased Power	5,319,226	5,371,322
624	Pumping Operation-Labor and Expenses	1,218,491	1,376,524
630	Pumping Maintenance-Supervision and Engineering	76,327	68,801
631	Pumping Maintenance-Structures and Improvements	120,078	176,316
633	Pumping Maintenance-Equipment	316,901	429,044
640	Water Treatment Operation-Supervision and Engineering	120,210	97,643
641	Water Treatment Operation-Chemicals	555,706	659,533
642	Water Treatment Operation-Labor and Expenses	1,191,445	1,545,634
650	Water Treatment Maintenance-Supervision and Engineering	86,436	79,472
651	Water Treatment Maintenance-Structures and Improvements	1,112	2,374
652	Water Treatment Maintenance-Equipment	401,443	442,308
660	Trans. and Distrib. Operation-Supervision and Engineering	44,561	57,386
661	Trans. and Distrib. Operation-Storage Facilities	41,436	66,645
662	Trans. and Distrib. Operation-Lines Expenses	472,204	486,381
663	Trans. and Distrib. Operation-Meters	1,173,186	1,082,877
664	Trans. and Distrib. Operation-Customer Installations	134,338	124,672
665	Trans. and Distrib. Operation-Miscellaneous	131,854	87,115
666	Trans. and Distrib. Operation-Rents	15,305	35,657
670	Trans. and Distrib. Maintenance-Supervision and Engineering	281,372	299,232
672	Trans. and Distrib. Maintenance-Tanks	81,112	174,372
673	Trans. and Distrib. Maintenance-Mains	1,004,065	980,451
675	Trans. and Distrib. Maintenance-Services	819,110	756,790
676	Trans. and Distrib. Maintenance-Meters	188,897	151,120
677	Trans. and Distrib. Maintenance-Hydrants	107,175	71,199

WATER RESEARCH FOUNDATION™

ADVANCING THE SCIENCE OF WATER®

EPA

Improving Water Utility Capital Efficiency

Subject Area: Management and Customer Relations

Improving Water Utility Capital Efficiency

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CHAPTER 2
CAPITAL INTENSITY

The term *capital intensity* is used to describe the level of assets (property, plant and equipment) required to support a business in the generation of revenues. Put another way, *capital intensity* (the ratio of assets to revenues) represents the net dollar amount of assets needed to generate one dollar of revenues. Capital intensity will vary significantly from industry to industry and from company to company. Key drivers of capital intensity include the nature of the industry, the effectiveness and efficiency of the capital process, the degree of vertical integration, and the price charged per unit of output delivered by the capital facilities.

The following discussion will show that water and wastewater utilities are among the most capital intensive business entities. Businesses that are highly capital intensive "must develop effective decision and control processes over capital spending and asset management. Key process controls include review of proposed expenditures to ensure business and economic justification, reviews to monitor project implementation, post audits, physical control over existing assets, and identification and disposal of underutilized assets" (Alexander 2006). Businesses with high capital intensity must also reflect these conditions in the long term pricing of the product or service provided or face significant issues with the financing implications for the replacement or expansion of services over time.

DATA SOURCES

The following analysis is based on the data sources and sample sizes summarized below:

- 2005 National Association of Clean Water Agencies (NACWA) survey (138 utilities)
- 2006 American Water Works Association (AWWA) rate survey (sample size 265)
- 2004 National Association of Water Companies (NAWC) Survey, dated Jan. 2006 (57 companies representing multiple utilities)
- 2004 American Water Works Association/Raftelis Financial Consulting (AWWA) survey (sample size 265 utilities)
- Associated Utility Services (AUS) utility reports
- Standard & Poors (S&P)

COMPARATIVE CAPITAL INTENSITIES

The following discussion defines the ratio of net asset value to annual operating income as its measure of capital intensity. Identifying that water utilities are among the most capital intense industries is an important precursor in conveying the importance of achieving capital efficiency to water utilities. Figure 2.1 on the following page summarizes relative capital intensities and is a composite of calculations performed by the project team and Ms. Kathy Pape of Aqua

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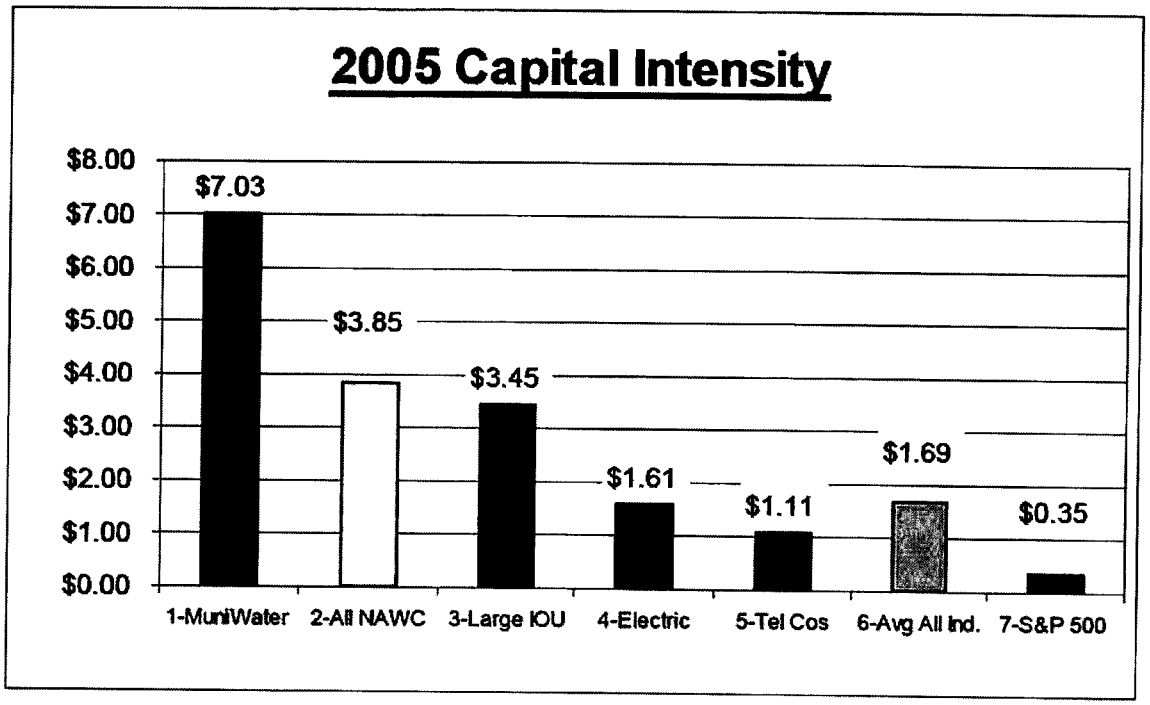

Figure 2.1 Comparable capital intensities of various industries

In Figure 2.1, the S&P industrials include data from 498 of the S&P 500 (two were not included due to limited data). Table 2.1 presents the number of utilities represented in the bars 3 through 5 in Figure 2.1 (bar 6 is the average of bars 3 through 5 and, thus contains 123 utilities):

Table 2.1
Number of utilities represented in bars 3 through 6 in Figure 2.1

Large IOU Water	11 - serving in excess of 20,000,000 people in total
Electric	25 - all major companies
Combined electric and gas	40*
Gas Distribution	28*
Telephone	19

* Included in electric bar 4

It is interesting to note that other regulated industries (electric, gas and telephone) have significantly lower capital intensities. This may be due (as noted on the previous page) to the nature of the industry. However, it is interesting to note that investor owned utilities (IOUs) have lower asset to revenue ratios than municipal utilities. When this was presented to the EPA Expert Workshop on Full Cost Pricing (November 1-3, 2006, East Lansing Michigan), state utility regulators and representatives from IOUs opined that this better performance by IOUs was due to:

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1. IOUs have to meet the "used and useful" test on capital additions and are thus constrained from oversizing
2. Capital additions are made from owner's equity. A large portion of capital improvements made by municipal utilities is debt funded through rates.
3. CIP approvals are made by commissions and staffs that review many utility CIPs; municipal utility reviewers are only familiar with that one utility

This issue was discussed in a panel of utility managers drawn from our Utility partners. Our municipal utility panel was not surprised, noting as possible factors:

- Pressure from elected officials to build plant that might not meet the cost-benefit test or the "used and useful" test as applied by regulators
- The oversizing of municipal facilities
- Risk averse contracts mandated by owner governments

ADDITIONAL COMPARISONS BETWEEN MUNICIPAL UTILITIES AND IOUs

The previous discussion dealt with the differences in ratios between municipal utilities and IOUs. However, the problem with ratios is that an unusually different value in either the numerator or denominator can throw off comparisons (another way of saying this is that maybe IOUs look better because their rates are substantially higher, thus lowering the ratio). If this were the case, one would expect to see it in such ratios as net plant per person served and operating revenue per person served. Table 2.2 presents this comparison using the 2004 NAWC data for IOUs and 2006 AWWA rate survey data for municipal utilities:

Table 2.2
Financial metric comparison between investor-owned and municipal utilities

Type of Utility	Investor Owned	Municipal
Net Plant/person served	$690	$756
Operating Revenue/person served	$168	$116

In this comparison, the advantage of the IOU narrows because of the higher revenue per person. This higher revenue per person reflects that IOUs have some costs that municipal utilities do not have (taxes) and likely reflects that the average NAWC utility is smaller than the average utility in the AWWA survey. Another potentially useful comparison is to compare operations and maintenance cost per account. This would be a check on the capital/O&M tradeoff (i.e., less money being expended on capital in exchange for a higher level of operations and maintenance). Unfortunately, the AWWA survey data did not permit the calculation of this rate. Instead, we went to the 2006 AWWA benchmarking survey (64 water only utilities). Table 2.3 presents this comparison on the following page:

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Table 2.3
Comparison of O&M expense per account for investor-owned and municipal utilities

Type of Utility	Investor Owned	Municipal
O&M $/account	$322	$269

Thus, while it initially appeared that IOUs were much less capital intensive than municipal utilities and therefore possessed significant cost of service advantages, that advantage is somewhat offset by the higher level of revenues and the way they handle the O&M/capital tradeoff. Further complicating this analysis is the "snow flake to tap" responsibility and capital investment consequences for major municipal utilities such as Seattle's watershed reservoir system, San Francisco's Hetch-Hetchy System for reservoirs and 200+ mile transmission line, and New York City's Catskill. Often, the IOU system is able to obtain its raw water supply from these systems and thus avoid this area of capital investment.

Differences in capital intensity could also result from differences in practices. Although our survey sample (discussed in Chapter 6) was too small to draw firm conclusions, IOUs tend to score better than municipals in the following areas:

- Planning
- Design
- Consultant selection
- Use of performance measures

The project team's experience with Asian utilities is that they are also less capital intense. While there are many reasons for this, Asian utilities seem to be more open to alternative contracting methods and to incorporate lessons learned into their capital process. For example, the Shanghai Water Assets and Operations Division (this is not a division, but the actual name of the utility) incorporates into the capital process a planned for and funded post mortem at the end of each project in which they identify what went well, what didn't, and how the process should be changed in the future to improve the process. As is the case with Singapore, Shanghai's process also includes an evaluation of the optimum procurement methodology for each project.

Is The Capital Intensity of Water Utilities Rising?

If utilities were not able to raise rates to match the increased rate of capital expenditures (a problem for utilities when capital costs increase rapidly), we would expect to see asset to revenue ratios increasing. From 2004 to 2006 (based on more than 200 utilities as surveyed for AWWA for its annual Water and Wastewater Rate Survey), the average asset to revenue ratio for

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the same utilities increased by 3.8%. This shows that while capital costs are increasing, rate increases are not keeping up.

Can O&M Cost Reductions Offset (for rate purposes) Capital Intensity Increases?

The National Association of Clean Water Agencies (NACWA) has been surveying a similar group of wastewater utilities asking similar questions every three years since the early '80s. The following summarizes the same utility O&M cost increases (or decreases) for three year intervals for a nine year period (shown by the year of the data, surveys are published one year later):

From 1995-1998 (1999) .....-10.8%
From 1998-2001 (2002)..... +9.4%
From 2001-2004 (2005).....+13.4%

There does not appear to be a comparable set of data for water utilities, however it is possible to calculate likely O&M costs from the AWWA rate survey data. From 2004 to 2006, the average O&M increases outpaced revenue increases (26% vs. 24%).

CONCLUSION

The key conclusions to be drawn from this analysis are:

- Water and wastewater utilities may be the most capital intensive sectors of the economy
- Highly capital intensive businesses must be efficient in their capital process and related decision making
- Other regulated utilities consisting of plant and distribution networks (electric, gas and telephone) are significantly less capital intensive
- IOUs are less capital intensive although their apparent advantage is somewhat offset by higher revenues per person served and higher O&M costs per person served
- Differences in practices (e.g. redundancy, reserve capacity, maintenance standards and practices, project planning & delivery methods, contracting requirements) may also account for differences in capital intensity
- Capital intensity has been rising for water utilities
- After years of O&M efficiency improvements, O&M cost increases are now outpacing inflation

The bottom line is that, being extremely capital intensive, water utilities must strive to become more capital efficient. It appears that improving practices may be one way to improve capital efficiency.

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CHAPTER 3
TWENTY-YEAR CAPITAL NEEDS

In the previous chapter we identified that becoming capital efficient is extremely important to water utilities because they are so capital intensive. In this chapter, we discuss the forces that will be increasing the level of capital expenditures for the next few decades.

US EPA'S 20 YEAR CAPITAL NEEDS SURVEY

The US EPA conducts a 20 year Capital Needs Survey every four years in an attempt to estimate for policy makers the infrastructure expenditure needs of this sector. A similar effort is also performed for wastewater agencies. The report is typically issued two years after the date of the data itself, so the 2003 Needs Survey was issued in 2005; the 2007 Needs Survey, ongoing as this is written, will be published in 2009.

The 2003 EPA Needs Survey showed an increase of 67% from the previous two needs surveys, which had stayed relatively flat, as shown below in Figure 3.1:

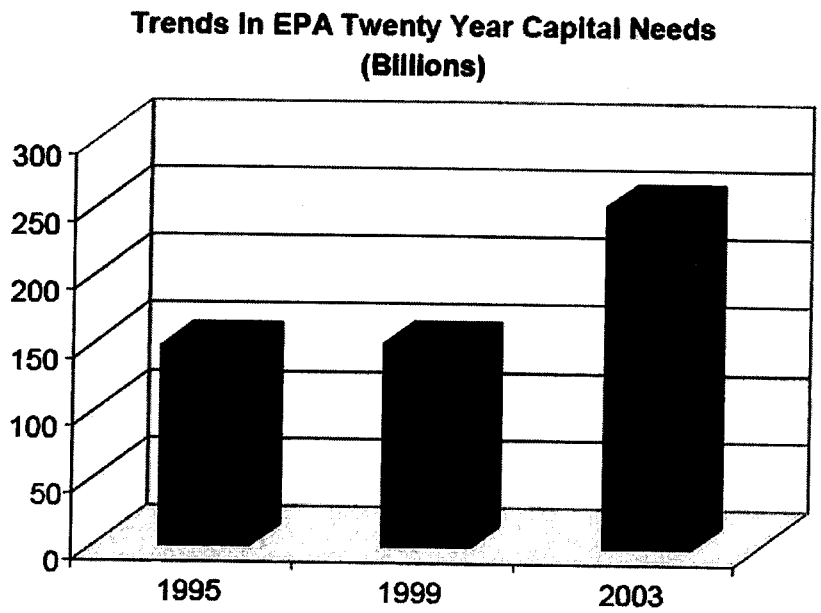

Figure 3.1 Trends in EPA twenty year capital needs

The reasons for this increase and a look into the future can be found in the U.S. EPA Document "The Clean Water and Drinking Water Infrastructure Gap Analysis" (EPA 2002). The capital needs distribution of the U.S. drinking water systems is shown in Figure 3.2 on the following page:

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maintain nitrate treatment plants far exceeds the already high cost to remove arsenic. Mr. Schneider discusses the cost of designing, constructing, operating, and maintaining nitrate removal facilities in his pre-filed direct testimony.

Q. PLEASE DISCUSS THE RISKS POSED BY NITRATES FURTHER.

A. Nitrates are regulated as an acute contaminant because they pose significant, immediate, and potentially life-threatening risks to certain consumers. Therefore, any violations of the nitrate MCL require immediate action. Any sources with nitrate levels above the MCL must be treated before they can be used to supply drinking water to customers.

As a result, contamination from nitrates materially increases Arizona Water's business risk far more than for water utilities in other parts of the country, or even in other parts of Arizona.

Capital Intensity and Aging Infrastructure

Q. IS ARIZONA WATER'S BUSINESS CAPITAL INTENSIVE AND IS THAT RELATED IN ANY WAY TO AGING INFRASTRUCTURE?

A. Arizona Water's business is extremely capital intensive. For example, in its annual report filed with the Commission for the year ended December 31, 2014, Arizona Water reported $320 million of net utility plant and $64 million of operating revenues.[12] This equates to approximately $5 of net utility plant per dollar of operating revenue. But this statistic does not include the effects of replacing significant amounts of aging infrastructure, currently estimated at $206.9 million. A joint Water Research Foundation/EPA report concluded that replacing aging infrastructure will cause the capital intensity of water utilities, including Arizona Water, to increase even higher.[13] Ms. Ahern discusses differences in capital intensity between the water utility industry, in particular Arizona Water, and other regulated utilities in her pre-filed testimony.

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[12] *See* Exhibit WMG-3

[13] *See* Exhibit WMG-4, Pages 9-15, Joint Water Research Foundation/EPA report, *Improving Water Utility Capital Efficiency, 2009, ISBN 978-1-60573-059-2*

Q. WHY IS THAT IMPORTANT TO THIS PROCEEDING?

A. Because, as Ms. Ahern testifies, the Bluefield Water Works case requires that a utility's "return should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain its credit and enable it to raise the money necessary for the proper discharge of its public duties." Absent such a return authorized by the Commission in this proceeding, the Company will not be able to raise the capital it needs to replace aging infrastructure, which in turn is necessary for the Company to provide safe, reliable and adequate water utility service.

Q. HAS THE COMMISSION CONCLUDED THAT THE NEED TO REPLACE LARGE AMOUNTS OF INFRASTRUCTURE NECESSITATES A HIGHER AUTHORIZED ROE?

A. Yes. In Arizona Water's most recent Eastern Group general rate case, the Commission concluded that:

"Our decision (on COE) has been influenced by a number of other significant factors,".....and

"We conclude that the Eastern Group, due to the age of some of its systems and the resulting need for infrastructure replacement and improvement, necessitates a somewhat higher COE."[14]

Further, the Commission, after conducting a rehearing of this Eastern Group general rate case concluded that:

"Moreover, we agree that the 10.55 percent ROE will assist the Company in attracting the capital necessary to fund the costs of replacing the Eastern Group's unique and extraordinary needs related to its aging infrastructure."[15]

[14] Decision No. 73736, page 61, lines 11-17.
[15] Decision No. 74463, page 42, lines 19-21.

Q. ARE THERE CIRCUMSTANCES PRESENTED IN THIS CASE THAT JUSTIFY THE COMMISSION APPROVING A HIGHER ROE, OR A RISK PREMIUM, DUE TO THE AGING INFRASTRUCTURE AND OTHER EXTRAORDINARY COSTS?

A. Yes. Like the compelling reasons presented in Arizona Water's last Eastern Group general rate case, a higher ROE will assist Arizona Water in attracting the capital necessary to fund the costs of replacing the Western Group's unique and extraordinary needs related to its aging infrastructure, as well as arsenic and nitrate removal facilities.

Arizona Water's Relative Small Size

Q. HOW DOES ARIZONA WATER'S SIZE COMPARE TO OTHER WATER UTILITIES IN THE UNITED STATES?

A. Arizona Water is much smaller than the proxy group of publicly-traded water utilities referenced by Ms. Ahern. In fact, Arizona Water is only approximately one tenth the average size of publicly-traded water utilities in terms of annual revenues. The following table shows this size comparison.

Table 5-1 Comparison of Arizona Water to Publicly Traded Water Utilities

Annual Revenues of Publicly-Traded Water Utilities vs. Arizona Water Company	
Publicly-Traded Water Utility	Annual Revenues
American Water Works	$2,670 million
American States Water	$326 million
California Water Service	$597 million
Aqua America	$780 million
SJW Corp	$320 million
Middlesex Water	$117 million
York Water	$45.9 million
Connecticut Water	$94 million
Average Annual Revenues	$619 million
Arizona Water	$63 million
Compared to Publicly-Traded Water Utilities	Approximately 1/10th the average size

Q. HOW DOES SIZE AFFECT ARIZONA WATER'S BUSINESS RISK?

A. Publicly traded companies, such as the proxy group referenced by Ms. Ahern, are able to raise funds and capital through the sale of their securities, whether debt or equity, on the open market. Arizona Water's stock is not publicly traded, and as a result, it is not able to raise capital as easily as publicly-traded water utilities.

VI. Nitrate and Arsenic Cost Recovery Mechanisms

Q. WHY IS THERE A NEED TO ESTABLISH A NCRM?

A. As discussed above, nitrate levels are rising in the Pinal Valley and White Tank service areas. As a result, Arizona Water needs to treat its water supply to comply with safe drinking water standards. However, construction and operating costs for nitrate removal facilities are significantly more those for similarly sized arsenic removal facilities. Mr. Schneider testifies about the high operating costs for nitrate removal facilities which will significantly increase Arizona Water's operating expenses and cost of service.

Q. ARE THERE ANY OTHER REASONS WHY A NCRM IS NEEDED?

A. Yes. Because nitrate is an acute contaminant, to the Company cannot defer treatment of any water supply for several years. Water supplies that do not comply with the nitrate MCL cannot be used for drinking water. So, being able to design and construct a nitrate treatment facility and apply for a surcharge to recover the prudently incurred costs is critical to Arizona Water's operation and to the safety of drinking water.

Q. PLEASE DESCRIBE THE BASIS FOR ARIZONA WATER'S ORIGINAL REQUEST FOR THE COMMISSION TO ADOPT AN ACRM.

A. Arizona Water faced a water safety issue when the EPA adopted a new safe drinking water standard for arsenic which became effective in 2006, reducing the arsenic MCL from 50 parts per billion ("ppb") to 10 ppb. Arizona Water determined that approximately $30 million was needed to design and construct

arsenic removal facilities in its Western, Eastern and Northern Groups over a three-year period. This level of capital investment would not have been possible without the approval of a mechanism to expeditiously recover at least part of the cost of constructing and operating these arsenic removal facilities.

The Commission concluded in Decision No. 66400, in which it approved an ACRM mechanism, that:[16]

- Arizona Water faces significant costs in the next several years to comply with the EPA's new arsenic MCL,
- The impact on Arizona Water, as well as many other smaller water companies, will be significant,
- Absent the implementation of an ACRM mechanism, the only viable alternative would be a series of rate applications and the possibility that interim rate relief would be required to maintain the Company's financial integrity until rate relief could be granted, and
- Establishing an ACRM mechanism balances the need for Arizona Water to remain financially sound with the avoidance of significant rate shock to customers.

The Commission's innovative and forward-thinking mechanism provided a practical solution to recover the cost of designing, constructing and operating facilities required to ensure the delivery of safe drinking water to Arizona Water's customers. This same mechanism was subsequently approved for other water utilities regulated by the Commission.

In the Western Group, Arizona Water plans to construct one new arsenic treatment plant because of a lack of water supplies that comply with the arsenic safe drinking water standard. Mr. Schneider discusses the Company's plans in more detail in his pre-filed direct testimony.

[16] See Commission Decision No. 66400, Page 20, Lines 3-23.

Q. DID THE COMMISSION APPROVE CONTINUATION OF THE ACRM IN DECISION NO. 71845 AND EACH GROUP'S RECENT GENERAL RATE CASE?

A. Yes. The Commission approved continuation of the ACRMs for Arizona Water's water systems in its last total company general rate case (Decision No. 71845) and in the company's most recent Western, Eastern and Northern Group general rate cases.

Q. DOES ARIZONA WATER PLAN TO CONSTRUCT AN ADDITIONAL ARSENIC REMOVAL FACILITY FOR ANY SYSTEM IN THE WESTERN GROUP?

A. Yes. Mr. Schneider testifies in Section VI of his direct testimony that Arizona Water plans to construct an arsenic removal facility at Well No. 34 treatment facilities in its Pinal Valley water system. This new arsenic removal facility is similar to the treatment facilities Arizona Water previously proposed to construct in its other water systems. Accordingly, Arizona Water requests that the Commission approve the continuation of the ACRM for the Company's Western Group of water systems.

Q. IS THIS ARSENIC REMOVAL FACILITY NEEDED TO COMPLY WITH SAFE DRINKING WATER STANDARDS?

A. Yes. The original phases of arsenic removal facilities constructed in Arizona Water's Pinal Valley water system did not include treatment for the full capacity of the arsenic-contaminated wells within that system. Treatment for the remaining well capacity is needed to ensure system reliability and adequacy and to ensure Arizona Water complies with safe drinking water standards. The ACRM will provide an opportunity to recover the costs associated with the new arsenic removal facilities that are not included in existing levels of revenues and operating income.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

ARIZONA WATER COMPANY

Arizona Corporation Commission

Docket No. W-01445A-15-0277

2015

WESTERN GROUP

RATE HEARING

Direct Testimony

of

Joseph D. Harris

EXHIBIT

A-5

admitted 5-12-16

TABLE OF CONTENTS

I. Introduction and Qualifications 3

II. ACRM Continuation 4

III. System Improvement Benefit ("SIB") Mechanism 5

IV. Nitrate Cost Recovery Mechanism 8

V. Off-Site Facilities Fee - White Tank 9

VI. Central Arizona Project ("CAP") Surcharge 12

EXHIBITS

ACRM Revenue Requirement JDH-1

System Improvement Benefit Surcharge Plan of Administration JDH-2

Nitrate Cost Recovery Mechanism Revenue Requirement JDH-3

Off-Site Facilities Fee Overview (White Tank) JDH-4

Off-Site Facilities Fee Comparison (White Tank) JDH-5

Off-Site Facilities Fee Tariff (White Tank) JDH-6

Off-Site Facilities Fee Tariff (Pinal Valley - Revised) JDH-7

CAWCD/CAP Pricing Schedule JDH-8

Purchased Water Costs JDH-9

CAP Surcharge for Pinal Valley and White Tank JDH-10

CAP Surcharge Plan of Administration JDH-11

ARIZONA WATER COMPANY

Direct Testimony of

Joseph D. Harris

I. Introduction and Qualifications

Q. PLEASE STATE YOUR NAME, EMPLOYER AND OCCUPATION?

A. My name is Joseph D. Harris. I am employed by Arizona Water Company (the "Company") as Vice President and Treasurer.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. I have been Vice President and Treasurer of the Company since March 2007. I received a Bachelor of Science degree in Accounting from Eastern Illinois University in 1981 and I am a Certified Public Accountant in the State of Illinois. From approximately 1982 until 1999, I worked for Northern Illinois Water Corporation, first as Staff Accountant (from 1986 to 1999) and then as Chief Accountant, where I managed the accounting department and oversaw the company's financial reporting, tax compliance, strategic planning and filings with the Illinois Commerce Commission. From November 1999 until July 2002, I served as Comptroller of Illinois American Water Company, managing the company's accounting and information system departments. From July 2002 until March 2007, I worked for American Water Service Company as Senior Financial Analyst and as Manager of Performance, Planning and Reporting, where I directed and coordinated preparation of the annual business plan and quarterly forecasts, and provided financial expertise on all financial issues. I am also a member of the American Institute of Certified Public Accountants.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I provide support for the Company's request for Commission authorization to continue the Arsenic Cost Recovery Mechanism ("ACRM"), as well as to implement a System Improvement Benefits ("SIB") surcharge, a Nitrate Cost Recovery Mechanism ("NCRM"), a new Off-Site Facilities Fee ("OSFF") and a Central Arizona Project ("CAP") surcharge in the Company's Western Group.

II. ACRM Continuation

Q. DOES THE COMPANY NEED TO CONSTRUCT ADDITIONAL ARSENIC TREATMENT PLANTS IN THE WESTERN GROUP?

A. Yes. For the reasons described in Section VI of Mr. Schneider's direct testimony, the Company must construct an additional arsenic treatment plant in its Pinal Valley water system at Well 34 in order to comply with federally mandated Safe Drinking Water Standards. The Company has already started to plan and design that plant.

Q. WHAT WILL BE THE FINANCIAL IMPACT ON THE COMPANY AS A RESULT OF CONSTRUCTING THIS FACILITY?

A. The estimated cost of this additional facility is approximately $3.4 million. Absent the ability to recover a portion of the costs associated with this federally-mandated treatment plant investment, there will be a significant negative impact on the Company's financial performance. The revenue requirement related to the capital costs of this required facility is $577,000, and does not include the additional cost of operating and maintaining the facility. Exhibit JDH-1 shows the revenue requirement for this additional facility.

Q. HAS THE COMMISSION PREVIOUSLY AUTHORIZED CONTINUATION OF THE ACRM FOR ANY OF THE COMPANY'S SYSTEMS?

A. Yes. In Decision Nos. 73144, 73736 and 74081 the Commission authorized the Company to make new ACRM filings for new arsenic treatment plants and upgrades to existing plants in its Western, Eastern and Northern Groups, respectively. The Company is requesting that the Commission authorize

continuation of the ACRM in this proceeding for its Western Group of water systems.

III. System Improvement Benefit ("SIB") Mechanism

Q. PLEASE PROVIDE AN OVERVIEW OF THE SIB MECHANISM.

A. The SIB Mechanism is a ratemaking tool that allows utilities to recover a limited portion of the capital costs (depreciation and return) of pre-approved non-revenue producing distribution system improvement projects completed between rate cases.

Q. HAS THE COMMISSION PREVIOUSLY APPROVED A SIB MECHANISM?

A. Yes. The Commission approved a SIB mechanism in the following dockets: W-01445A-11-0310, W-01445A-12-0348, W-02113A-13-0118 and SW-01428A-13-0042.

Q. IS THE COMPANY SEEKING APPROVAL OF A SIB MECHANISM IN THIS CASE?

A. Yes. Mr. Schneider describes in Section VIII of his direct testimony, and as demonstrated by the Aging Infrastructure Replacement Plan for the Company's Western Group of Water Systems (Exhibit FKS-12 to Mr. Schneider's direct testimony), the Company has identified $55.8 million in needed infrastructure replacements in the Western Group. Replacing aging and failing water distribution infrastructure is critical to enable the Company to maintain the integrity of its water distribution system and provide safe reliable and adequate water service. The Commission developed the SIB mechanism to allow water utilities to increase the level of investment in replacing aging and failing distribution infrastructure by allowing them to recover a portion of the cost of those investments on a more timely basis. Accordingly, the Company is requesting that the Commission approve the SIB mechanism for its Western Group of water systems in this proceeding.

Q. CAN THESE INFRASTRUCTURE REPLACEMENTS BE HANDLED AS PART OF THE COMPANY'S NORMAL MAINTENANCE AND REPLACEMENT PROGRAM?

A. No. At the current rate of water main replacements for the Company's Western Group, (6,300 feet per year), it would take over 50 years to replace 320,400 lineal feet of water mains identified in the Aging Infrastructure Replacement Plan for the Company's Western Group of Water Systems. The Company also identified 4,110 failing service lines, 182 fire hydrants and 4,110 meters that it needs to replace to reduce water loss and provide reliable and adequate service. The preliminary cost estimate of these infrastructure replacements is over $55.8 million, as shown in the table below:

Quantity	Description of Water Infrastructure	Estimated Cost
320,400	Replace Failing Water Mains	$38,997,000
4,110	Replace Failing Services	$13,410,000
4,110	Replace Failing Water Meters and Meter Boxes	$1,772,000
182	Replace Failing Hydrants	$1,631,000
Total		$55,810,000

Replacing this water infrastructure is essential to the Company's ability to provide safe, reliable and adequate water service, but also significantly increases the Company's cost of providing service. Given the magnitude of the total required water infrastructure replacements, only a portion of which are summarized in the above table, the Company cannot invest in this magnitude of infrastructure replacements without corresponding increases in revenues. Without the SIB, the Company would not make these investments which would severely weaken the Company's financial condition.

Q. PLEASE SUMMARIZE THE SIB FILING REQUIREMENTS.

A. In addition to making the request for a SIB mechanism, the Commission requires the Company to provide the information in SIB Plant Table I, which consists of a list of SIB eligible projects, including the relevant plant account, quantity, size, estimated cost, and a narrative describing why infrastructure in each replacement project needs to be replaced.

Q. HAS THE COMPANY PROVIDED IN ITS APPLICATION AND TESTIMONY ALL OF THE INFORMATION REQUIRED BY THE SIB SETTLEMENT AGREEMENT AND THE PLAN OF ADMINISTRATION APPROVED BY THE COMMISSION IN DECISION NOS. 74756 AND 75050?

A. Yes. The 2015 Updated Water Loss Reduction Program for the Company's Western Group of Water Systems includes SIB Table I found in Appendix FKS-13 to Mr. Schneider's direct testimony. A draft Plan of Administration is attached as Exhibit JDH-2.

Q. WILL THE SIB MECHANISM SUPPORT RATE GRADUALISM?

A. Yes. As the Commission found in Decision No.'s 73938 and 74463, the SIB mechanism allows a water utility to recover a small portion of infrastructure replacement costs after making an application to the Commission and proving that it has made necessary infrastructure replacements. If authority for a SIB surcharge is granted, the water utility may begin recovering a portion of the cost of the qualifying infrastructure replacements. However, each annual SIB surcharge is limited to no more than 5% of the revenue requirement approved in the rate case in which the SIB was authorized. These small periodic rate increases help customers adjust budgets accordingly and help limit the overall size of the utility's next rate increase.

Q. WHAT ARE THE OTHER CUSTOMER BENEFITS OF A SIB?

A. There are a number of customer benefits of a SIB mechanism. Primary among them are system reliability, improved water quality and fire protection, especially

for public purposes. Benefits also include decreased water loss, improved water pressure and flows, fewer service interruptions, and rate gradualism discussed above.

Failing water distribution infrastructure can cause a number of customer service issues such as degradation of water quality and increased service interruptions. Service interruptions can affect hundreds of customers when water mains fail. Additionally, leaking water mains and services result in millions of gallons of treated water being lost each year. While the Company's leak detection and repair program has made progress in addressing water loss and repairing leaks, the SIB mechanism allows water utilities to make progress in improving the integrity and reliability of their water distribution systems, reducing service interruptions caused by water distribution system failures. The need to address water loss and system integrity has become increasingly important as much of the Company's Western Group service areas remain in severe drought.

Finally, implementation of the SIB mechanism will provide timely recovery of a portion of the cost of replacing aging infrastructure, which, in turn, will provide revenues needed for the Company to attract capital and to continue to make investments in much needed water system infrastructure to operate and maintain the reliability and efficiency of its water systems.

IV. <u>Nitrate Cost Recovery Mechanism ("NCRM")</u>

Q. IS THE COMPANY REQUESTING AN NCRM?

A. Yes. As described in Mr. Garfield's and Mr. Schneider's testimony, the Pinal Valley water system has four wells that produce water with high levels of nitrates. High nitrates in drinking water have serious health implications as discussed more fully in Section X of Mr. Schneider's testimony. In order to treat water from these wells to remove nitrates and comply with the federally mandated Safe Drinking Water Act standards, the Company needs to construct nitrate removal facilities.

Q. HAS THE COMPANY PREPARED A COST ESTIMATE FOR THESE ADDITIONAL FACILITIES?

A. Yes. Company engineers estimate that it will cost $26 million to construct these four nitrate removal facilities. Initially the Company will construct the nitrate removal facility at Well 33. This facility's estimated construction cost is $6.5 million and will cost $1.8 million each year to operate and maintain. The Company estimates the revenue requirement related to constructing and operating this facility to be $2.9 million per year.

Q. HOW WILL THE NCRM WORK?

A. The Company is proposing that the NCRM work exactly like the ACRM. As such, the NCRM will incorporate all of the filing requirements and provisions set forth in Decision No. 64400, dated October 14, 2003.

Similar to filing for an ACRM surcharge, once a nitrate treatment plant is completed and is placed in service, the Company will file an application seeking approval of the NCRM Step-1 surcharge. Exhibit JDH-3 shows the illustrative schedules that would be filed with such an application. Additionally, the Company will provide Staff and RUCO with all supporting documentation including invoices, placed in service notices, and Approvals of Construction.

Q. HAVE YOU PREPARED AN ESTIMATE OF THE AMOUNT OF THE NCRM STEP-1 SURCHARGE BASED ON THE COST OF CONSTRUCTING THE NITRATE TREATMENT PLANT MENTIONED ABOVE?

A Yes. As shown on Schedule 8 of Exhibit JDH-3, the estimated Step-1 surcharge on an average residential customer's bill is $2.20.

Q. WOULD THAT SURCHARGE ALLOW THE COMPANY TO RECOVER THE FULL COST OF DESIGNING, CONSTRUCTING, AND OPERATING THE NITRATE TREATMENT PLANTS?

A. No. The proposed NCRM, like the ACRM, would limit the Company's recover of operating costs to specific and narrowly defined costs, namely media replacement or regeneration costs, media replacement or regeneration service costs, and waste media or regeneration disposal costs.

Q. WILL THE COMPANY NOTIFY ITS CUSTOMERS WHEN IT FILES AN NCRM APPLICATION?

A. Yes. The Company will provide a written notice on customer bills notifying them that it has filed an application for an NCRM surcharge and informing them of the estimated increase on an average residential customer's bill.

V. <u>Off-Site Facilities Fee - White Tank</u>

Q. WHAT IS THE PURPOSE OF THE PROPOSED OFF-SITE FACILITIES FEE FOR THE WHITE TANK SYSTEM?

A. The off-site facilities fee will equitably apportion the costs of constructing off-site facilities needed to provide water production, treatment, delivery, recharge and recovery, storage, and pressure facilities among all new White Tank customers whose water supply requirements make these facilities necessary. More specifically, the fee will be used to fund the Company's White Tank Underground Recharge and Recovery Facility, which is described by Mr. Schneider in Section VII of his direct testimony. The fee will be applicable to all new service connections in the White Tank service area.

Q. WHAT IS THE AMOUNT OF THE PROPOSED FEE?

A. The proposed fee is $2,500 for each new service connection with a 5/8 x 3/4-inch meter, and the fee is graduated in amount for larger meter sizes.[1] Exhibit JDH-4 shows the estimated funds needed by meter size and a projection of the amount to be collected and expended to construct the necessary off-site facilities.

[1] The Company is proposing that the 5/8 X 3/4-inch fee and the 3/4-inch fee be the same for residential customers.

Q. HOW DID THE COMPANY DETERMINE THIS AMOUNT?

A. The Company determined this amount by determining the cost, in current dollars, of the White Tank Recharge and Recovery Facility, recovery wells and other off-site facilities not funded by developers, and dividing it by the number of new 5/8 x 3/4-inch meter equivalents. The Company also considered comparable impact fees charged by public service corporations and municipalities in surrounding areas when determining the amount of its proposed off-site facilities fee.

Q. HAVE OFF-SITE FACILITIES FEES PREVIOUSLY BEEN APPROVED BY THE COMMISSION BEFORE?

A. Yes. Among others, off-site facilities fees have been approved in Docket Nos. W-01445A-10-0517, W-01445A-11-0310, W-01445A-12-0348, W-01303A-05-0718, W-02859A-99-0101, W-02234A-00-0706 and WS-02987A-99-0745.

Q. WILL OFF-SITE FACILITIES FEES REPLACE ADVANCES AND CONTRIBUTIONS IN AID OF CONSTRUCTION TYPICALLY USED TO FUND THE INFRASTRUCTURE NEEDED TO SERVE NEW CUSTOMERS?

A. No. By definition, the off-site facilities fees are used to construct facilities that are not for the exclusive use of the applicant and will benefit the entire water system. In contrast, the cost of extending and providing on-site water infrastructure facilities to the applicant's premises or development is through advances or contributions in aid of construction.

Q. WHAT FACILITIES DOES THE COMPANY INTEND TO FUND WITH THIS OFF-SITE FACILITIES FEE?

A. The facilities are primarily the White Tank Recharge and Recovery Facility and the necessary water production, treatment, delivery, storage and pressure facilities needed to assure that renewable water supplies (i.e., CAP Water) are available for delivery to this growing area that are not otherwise paid for by developer contributions.

Q. WHEN DOES THE COMPANY PLAN TO CONSTRUCT THESE FACILITIES?

A. The preliminary schedule of construction is detailed by Mr. Schneider in Section VII of his direct testimony, and summarized in the attached exhibit, Exhibit JDH-4. It is the Company's intent to match the timing of construction of the White Tank Recharge and Recovery Facility with collection of off-site facilities fees. As described in the White Tank 2015 CAP Use Plan[2] this allows the Company to invest in large off-site infrastructure facilities such as the White Tank Recharge and Recovery Facility, without sharp increases in rate base, revenue requirements, or customer rates.

Q. PLEASE EXPLAIN HOW OFF-SITE FACILITIES FEES ARE ACCOUNTED FOR AND WHY THEY BENEFIT THE COMPANY'S CUSTOMERS.

A. When off-site facilities fees are received from developers, they are recorded in an off-site facilities fees deferred liability account. Once the off-site facilities are constructed and placed in service and paid for with these fees, an equivalent amount is transferred from the deferred liability account to Contributions in Aid of Construction ("CIAC"). As a result, there will be no increase in rate base as a result of constructing the White Tank Recharge and Recovery facility.

Q. WILL THE COMPANY OFFSET RATE BASE WITH UNEXPENDED OFF-SITE FACILITIES FEES?

A. No. Because these fees are not available to the Company, except for the restricted purpose of constructing off-site facilities as set forth in the Commission's findings in Decision Nos. 73144 (May 1, 2012) and 73736 (February 20, 2013). The Company is required to hold any unexpended fees as described above and then record as CIAC the full amount of Off-site Facilities Fees applied to qualifying off-site facilities once the Company completes and begins to use those facilities.

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[2] *See* August 7, 2015 filing in Docket No. W-01445A-15-0277.

Q. HAVE YOU COMPARED THE PROPOSED OFF-SITE FACILITIES FEE TO THE SAME TYPES OF FEES CHARGED BY OTHER UTILITIES AND MUNICIPALITIES IN THE WHITE TANK AREA?

A. Yes. Exhibit JDH-5 shows that the Company's proposed Off-site Facilities Fee is below the median of similar fees charged in nearby communities similarly located.

Q. WHAT IS THE FORM OF TARIFF FOR THIS FEE?

A. The proposed tariff is attached as Exhibit JDH-6.

Q. IS THE COMPANY PROPOSING ANY CHANGES TO THE PINAL VALLEY OFF-SITE FACILITIES?

A. Yes. In order to accommodate residential homes with fire sprinkler systems the Company is proposing the same Off-site Facilities Fee for Residential customers with a 3/4-inch meter as a 5/8 X 3/4-inch meter ($3,500). A revised tariff, Exhibit JDH-7, is attached showing the revised fees.

VI. Central Arizona Project ("CAP") Surcharge

Q. WHY IS THE COMPANY PROPOSING A CAP SURCHARGE?

A. As detailed in the Pinal Valley 2015 CAP Use Plan and the White Tank 2015 CAP Use Plan (the "2015 CAP Use Plans"), the Company is delivering CAP water to general service customers in Pinal Valley beginning in 2015 and in White Tank beginning in 2016. Assuming the Commission approves the Company's proposed regulatory treatment of CAP related costs in this proceeding, the Company will increase the amount of CAP water recharged, recovered, and delivered to general service customers each year until the Company's full CAP water allocations are put to beneficial use. Hence, a part of the Company's proposed regulatory treatment is the timely recovery of the purchased water costs directly related to the delivery of CAP water.

Q. PLEASE DESCRIBE THESE NEW PURCHASED WATER COSTS.

A. These purchased water costs include the direct cost of CAP water, including increases in the per acre-foot municipal and industrial ("M&I") capital and delivery charge net of any offsetting payments the Company receives from operators of groundwater savings facilities. They also include increases in costs related to the quantity of CAP water recharged, recovered and delivered to general service customers and the recovery of additional deferred amounts recorded for CAP M&I capital charges related to increased CAP water deliveries. Mr. Reiker discusses these purchased water costs in Section VII of his direct testimony.

Q. PLEASE EXPLAIN WHAT YOU MEAN BY DIRECT COST OF CAP WATER.

A. The Central Arizona Water Conservation District ("CAWCD") is the state entity responsible for the operation, maintenance and management of the CAP aqueduct system and the delivery of CAP water. As part of its management responsibilities, CAWCD annually sets the per acre-foot price of CAP water. The Company pays two components of cost for CAP water; an M&I capital charge on its entire CAP allocation and delivery charge for CAP water actually delivered.

The M&I capital charge is a per acre-foot charge assessed on the Company's entire allocation of CAP water for its share of the cost of constructing the CAP canal. For Pinal Valley, that allocation is 10,884 acre-feet, and for White Tank the allocation is 968 acre-feet. This means that every year CAWCD requires the Company to pay the capital charge on allocations totaling 11,852 acre-feet in its Western Group of water systems, irrespective of the quantity of CAP water delivered.

In addition, CAWCD charges the M&I delivery charge for each acre-foot of water delivered to the Company, whether at a groundwater savings facility, underground storage facility, or for direct non-potable use. While this cost is only paid for CAP water actually delivered, it is the higher of the two charges. Exhibit JDH-8 is the pricing schedule from CAWCD for 2015, showing both of the CAP

water price components. The pricing schedule from CAWCD also shows that the projected price of the M&I capital and delivery charges will increase by 13.6% and 14.1%, respectively, by 2020.

Both the Pinal Valley and White Tank 2015 CAP Use Plans show that the Company will increase the amount of CAP water recharged, recovered, and delivered to customers over the next five years, as shown in the table below:

Pinal Valley CAP Water Cost Increase

Year	Acre-Feet Delivered	Delivery Charge per Acre-Foot	Total Delivery Cost	Increase from Test Year	
Test Year	5,000	$157	$785,000	$0	0.0%
2016	6,000	$161	$966,000	$181,000	23.1%
2017	7,000	$166	$1,162,000	$377,000	48.0%
2018	8,000	$171	$1,368,000	$583,000	74.3%
2019	8,956	$174	$1,558,344	$773,344	98.5%
2020	8,956	$196	$1,755,376	$970,376	123.6%

White Tank CAP Water Cost Increase

Year	Acre-Feet Delivered	Delivery Charge per Acre-Foot	Total Delivery Cost	Increase from Test Year
2015	0	$157	$0	$0
2016	375	$161	$60,375	$60,375
2017	500	$166	$83,000	$83,000
2018	625	$171	$106,875	$106,875
2019	750	$174	$130,500	$130,500
2020	968	$196	$189,728	$189,728

As shown in the table above, the per acre-foot delivery cost increases by an average of 5% per year based on CACWD's latest published rate schedule[3], and the Company will be increasing the quantity of CAP water delivered, assuming the Company's proposed CAP surcharge is approved in this proceeding.

Q. ARE THERE ANY OTHER DIRECT COSTS RELATED TO CAP WATER?

A. Yes. In Decision No. 68302, the Commission authorized the Company to continue to record as a deferred asset the CAP M&I capital charges it must pay on its CAP allocation, plus an interest component. Decision No. 68302 also

[3] *See* Exhibit JDH-8

authorized a CAP M&I fee[4], to recover a portion of these deferred charges. The Company collects the CAP M&I fees from new customers in the Pinal Valley (Casa Grande and Coolidge) and White Tank service areas. In Decision No. 68302, the Commission authorized the Company to begin recovering $142,896, a pro rata portion of previously deferred CAP M&I capital charges related to the amount of the Company's CAP allocation delivered to use for non-potable customers in 2003 – the test year in that proceeding. Subsequently, in Decision No. 71845 the Commission authorized the Company to begin recovering an additional $447,197 in deferred costs related to CAP water delivered in 2007 – the test year in that proceeding.

As described in Section IV of Mr. Reiker's direct testimony, at the end of the test year in this case, the Company had an adjusted deferred balance of $2,289,147 and $480,815 in the Pinal Valley and White Tank service areas, respectively. Consistent with the Commission's prior treatment of these costs as the Company delivers CAP water to customers, they should be included in the Company's CAP surcharge on a pro rata basis, as the Company increases its CAP water deliveries.

Q. HAS THE COMPANY QUANTIFIED THE INCREASE IN PURCHASED WATER COSTS INCLUDING DIRECT AND DEFERRED COSTS?

A. Yes, Exhibit JDH-9 shows the projected year over year increase in purchased water costs.

Q. ARE THESE COSTS RECOVERED IN THE COMPANY'S REVENUE REQUIREMENT?

A. No. The Company's revenue requirement in this case includes only those costs incurred during the adjusted test year. Increases in purchased water costs due to future increases in pricing from CAWCD ~~and~~\ increases in quantities of CAP

[4] Formerly known as a CAP "Hook-Up Fee."

water delivered, including the pro-rata portion of deferred M&I capital charges, are not included.

Q. WILL THE COMPANY SUBMIT AN ANNUAL REPORT OF THE SURCHARGE COLLECTIONS?

A. Yes. The Company will submit an annual report showing the amount of CAP Surcharge revenue collected compared to the amount authorized and identifying any under- or over-collected CAP Surcharge.

Q. HOW WILL THESE UNDER- OR OVER-COLLECTIONS BE HANDLED?

A. Any under- or over-collected CAP Surcharge revenues shall be recovered or refunded, without interest, over a 12-month period by means of a CAP Surcharge True-up Adjustment.

Q. HOW WILL THE CAP SURCHARGE BE CALCULATED?

A. The Company will compute each component of purchased water expense (i.e. net per acre-foot capital and delivery charge, quantity delivered, and deferred M&I capital charges), and adjust this total by the amount of under- or over-collection to compute the net amount of the CAP surcharge for the current year. The CAP surcharge revenue will be the difference between the amount derived by this calculation, less the total amount of purchased CAP water expense included in base rates in this proceeding, as reflected in income statement adjustment IS-12 and explained by Mr. Reiker in Section VII.B of his direct testimony. The CAP surcharge rate is determined by dividing the CAP surcharge revenue by the number of thousand gallons sold. Exhibit JDH-10 shows the calculation of the CAP Surcharge.

Q. HAVE YOU ESTIMATED THE EFFECT OF THE COMPANY'S PROPOSED CAP SURCHARGE ON A CUSTOMER'S WATER BILL IN THE PINAL VALLEY AND WHITE TANK SERVICE AREAS?

A. Yes. Exhibit JDH-10 shows the calculation of the CAP Surcharge for the Pinal Valley and White Tank service areas. The effect on a residential customer's

monthly bill is estimated to be $0.57 and $3.07 for Pinal Valley and White Tank, respectively.

Q. HAS THE COMMISSION APPROVED A SIMILAR SURCHARGE FOR OTHER WATER UTILITIES?

A. Yes. In Docket No. W-02113A-13-0118 the Commission approved a Sustainable Water Surcharge Mechanism for Chaparral City Water Company and in Docket No. WS-02987A-08-0180, the Commission approved a Central Arizona Groundwater Replenishment District account adjustor mechanism for Johnson Utilities Company.

Q. HAS THE COMPANY PREPARED A DRAFT PLAN OF ADMINISTRATION FOR THE CAP SURCHARGE?

A. Yes. A draft Plan of Administration which is similar to the Plan of Administration approved for Chaparral City Water Company is attached as Exhibit JDH-11.

Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

EXHIBIT JDH - 1

ARIZONA WATER COMPANY
DOCKET NO. W-01445A-15-0277
REVENUE REQUIREMENT
AS OF DECEMBER 2014

Line No.		PINAL VALLEY
1		
2	Arsenic Compliance Revenue Requirement:	
3		
4	Test Year Data:	
5	Arsenic Plant in Service	$ 3,400,000
6	Accumulated Depreciation	-
7	Arsenic Rate Base	$ 3,400,000
8	Required Rate of Return	8.93%
9	Required Operating Income	$ 303,620
10	Gross Revenue Conversion Factor	1.64030
11	Revenue Required - Return on Arsenic Treatment Plant	$ 498,028
12	Depreciation on Arsenic Treatment Plant	$ 78,650
13		
14	Revenue Required - Capital Costs (Ln. 11 + Ln. 12 + Ln. 13)	$ 576,678
15		
16	Revenue Required - Capital Costs & Recurring O&M Expenses (Ln. 14 + Ln. 15)	$ 576,678
17	Revenue Required - Deferred O&M Expenses	$ -
18	Total Revenue Required - Step 1 (Ln. 16 + Ln. 17)	$ 576,678
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46		
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48		
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EXHIBIT JDH - 2

TABLE OF CONTENTS

I. GENERAL DESCRIPTION 2

II. DEFINITIONS 2

III. SIB RELATED FILINGS 3

IV. SIB SURCHARGE CALCULATIONS 5

V. ADDING PROJECTS TO SIB PLANT TABLE I UNDER EMERGENCY CIRCUMSTANCES 7

VI. SIB SURCHARGE RATE DESIGN 8

VII. SIB SURCHARGE NOTICE REQUIREMENTS 9

EXHIBITS

SIB Plant Table I ..... EXHIBIT 1

SIB Plant Table II ..... EXHIBIT 2

SIB Schedule A ..... EXHIBIT 3

SIB Schedule B ..... EXHIBIT 4

SIB Schedule C ..... EXHIBIT 5

SIB Schedule D ..... EXHIBIT 6

I. GENERAL DESCRIPTION

This document is the Plan of Administration ("POA") for the System Improvement Benefits ("SIB") mechanism approved for Arizona Water Company ("Company") by the Arizona Corporation Commission ("Commission") in Decision No. ##### (date). The SIB mechanism provides for the timely recovery of the capital costs (pre-tax return on investment and depreciation expense, net of associated retirements) associated with distribution system improvement projects that: (1) have not been included in rate base for recovery in Decision No. #####; (2) are listed in the latest Commission approved SIB Plant Table I; (3) have been verified to be completed[1]; and (4) have been placed in service per SIB Plant Table II. Any expenditures offset by contributions in aid of construction or advances in aid of construction are not eligible for inclusion in the SIB mechanism.

II. DEFINITIONS

A. NARUC – National Association of Regulatory Utility Commissioners

B. SIB – System Improvement Benefits mechanism, to be implemented between rate proceedings to support investment in utility plant recorded in SIB Eligible NARUC accounts.

C. SIB Eligible Plant – Investments in plant recorded in the SIB Eligible NARUC accounts.

D. SIB Eligible NARUC accounts:

1. NARUC Account No. 309 – Supply Mains
2. NARUC Account No. 343 – Transmission and Distribution Mains
3. NARUC Account No. 345 – Services
4. NARUC Account No. 346 – Meters and Meter Installations
5. NARUC Account No. 348 – Hydrants

E. SIB Plant Table I (an excerpt is attached to this POA as Exhibit 1) – The schedule of planned SIB Eligible projects that is either approved in the Company's most recent rate case or updated by a subsequent Commission decision. As used herein, this term refers to the latest Commission approved SIB Plant Table I available unless reference is made to a particular Commission decision. As of the date of this POA, the latest Commission approved SIB Plant Table I is attached as Exhibit D to Decision No. #####.

[1] Acceptable forms of verification may include the Arizona Department of Environmental Quality Approval of Construction or signed Construction Placed in Service Notice signed by Professional Engineer where Approval of Construction is not applicable.

F. SIB Plant Table II (an excerpt is attached to this POA as Exhibit 2) – The schedule of completed and verified SIB Eligible Plant projects from the latest Commission approved SIB Plant Table I, including the associated plant retirements.

G. Total Revenue Requirement – The revenue requirement approved in Decision No. #####, plus the SIB Authorized Revenue.

H. SIB Revenue Requirement – The revenue requirement equal to the pre-tax return on investment and depreciation expense associated with SIB-eligible projects that have been completed and placed into service, per SIB Plant Table II, net of associated retirements.

I. SIB Revenue Requirement Efficiency Credit – An amount equal to five percent (5%) of the SIB Revenue Requirement.

J. SIB Authorized Revenue – Amount equal to the SIB Revenue Requirement less the SIB Revenue Requirement Efficiency Credit, plus or minus any SIB True-up Adjustment.

K. Gross SIB Surcharge – Amount to be shown on customers' bills, based on meter size, without consideration of the SIB Surcharge Efficiency Credit.

L. SIB Surcharge Efficiency Credit – An amount equal to five percent (5%) of the Gross SIB Surcharge, to be shown on customers' bills.

M. SIB Surcharge – The amount equal to the Gross SIB Surcharge less the SIB Surcharge Efficiency Credit to be charged, based on meter size, calculated to recover the SIB Authorized Revenue. The SIB Surcharge is to be shown as a separate line item on customer bills.

N. SIB True-up Adjustment – The reconciliation of over- or under-collection of the SIB Authorized Revenue, as compared with the total SIB Surcharges collected for the preceding 12-month period. Each SIB True-up Adjustment shall also analyze the cumulative over- or under-collections to include a comparison of all past SIB Authorized Revenues, total SIB Surcharge collections, and prior SIB True-up Adjustments to be used in calculating the individual SIB True-up Adjustment by meter size.

III. SIB RELATED FILINGS

A. Progress Reports – The Company must file with Docket Control semi-annual status reports delineating the status of all SIB Eligible Plant projects, as listed in the latest Commission approved SIB Plant Table I. The initial semi-annual status report shall include only those projects from the initial SIB Plant Table I which the Company has designated as most likely to be completed and placed in service during the first 12 months.

B. Reconciliation and True-up – Once a SIB Surcharge is implemented, the Company must file annually to true-up its SIB Surcharge collections over the preceding 12 months with the SIB Authorized Revenue for that period, and establish a surcharge or credit to true-up

any over- or under-collections, regardless of whether it seeks a new surcharge. The filing dates for these annual true-ups shall be established in the Commission's Decision approving the SIB Surcharge.

C. SIB Surcharge Requests – The Company must file the following with each SIB Surcharge request:

1. SIB Plant Table II (with supporting information and documentation), listing the SIB Eligible Plant projects that have been completed and placed in service, for which the Company seeks cost recovery. Such SIB Eligible Plant must:

   a. Be projects listed in the latest Commission approved SIB Plant Table I;

   b. Have been completed and placed in service by the Company;

   c. Have been verified (see footnote 1); and

   d. Actually be serving customers.

2. A summary of the Commission approved SIB-Eligible projects (shown on SIB Plant Table I approved in Decision No. #####) the Company expects to complete and place in service during the next 12 months for inclusion in the next SIB Surcharge, to enable the Commission to establish the latest SIB Plant Table I.[2]

3. SIB Schedule A (an example is attached to this POA as Exhibit 3), showing a calculation of the SIB Revenue Requirement, SIB Revenue Requirement Efficiency Credit, SIB Authorized Revenue, Gross SIB Surcharge, SIB Surcharge Efficiency Credit and the SIB Surcharge. Schedule A shall be supported by revenue requirement schedules supporting the revenue requirement approved in Decision No. #####, and the pro-forma revenue requirements including the effect of SIB Eligible Plant.

4. SIB Schedule B (an example is attached to this POA as Exhibit 4) showing the SIB True-up Adjustment calculation for the prior 12-month SIB Surcharge period, as well as the individual SIB True-up Adjustment by meter size.

5. SIB Schedule C (an example is attached to this POA as Exhibit 5) showing the effect of the SIB Surcharge on a typical residential customer's monthly bill for both median and average usage.

6. SIB Schedule D (an example is attached to this POA as Exhibit 6) which shall include an analysis of the impact of completed SIB Eligible Plant projects on the

[2] Beginning with its SIB Surcharge request for the second 12-month surcharge period, the Company may request a change from the estimated Cost/Unit (shown on the SIB Plant Table I approved in Decision No. #####) due to inflation using the latest calendar year Consumer Price Index. This may be done only if the original SIB Plant Table I Cost/Unit did not account for inflation.

fair value rate base, revenue, and the fair value rate of return. The Company shall also include the following as part of SIB Schedule D:

a. The most current balance sheet at the time of the filing;

b. The most current income statement;

c. An earnings test schedule;

d. A rate review schedule (including the incremental and pro forma effect of the proposed increase);

e. An adjusted rate base schedule; and,

f. A construction work in progress ("CWIP") ledger for each project showing the accumulation of charges by month and paid contractor invoices., including a summary page showing the calculation of the SIB eligible rate base and depreciation expense net of associated retirements.

D. The Company will maintain and provide to the Commission's Utilities Division ("Staff") and the Residential Utility Consumer Office ("RUCO") schedules in Microsoft Excel format (with all formulae intact) supporting the revenue requirement approved in Decision No. #####, and the effects of completed SIB Eligible Plant for the current SIB Surcharge request and any previously approved SIB Surcharge and SIB True-up Adjustment requests.

E. The Company may file its initial SIB Surcharge request with Docket Control no earlier than 12 months after the entry of Decision No. #####.

F. The Company may make no more than one SIB Surcharge request every 12 months with no more than five (5) SIB Surcharge requests between rate case decisions. A SIB True-up Adjustment must be filed with each SIB Surcharge request, except the first SIB Surcharge request.

G. Unless otherwise authorized by the Commission, the Company is required to file its next general rate case for its Western Group no later than (date), with a test year ending no later than (date).

H. Any SIB Surcharges that are in effect shall be reset to zero upon the date new rates become effective in the Company's next general rate case.

IV. SIB SURCHARGE CALCULATIONS

A. Calculation of Amounts to Be Collected By the SIB Surcharge

1. The amount to be collected by the SIB Authorized Revenue shall be equal to the SIB Revenue Requirement minus the SIB Revenue Requirement Efficiency Credit, plus any SIB True-up Adjustment. For purposes of calculating the SIB Revenue Requirement:

   a. The required rate of return is equal to the overall rate of return authorized in Decision No. #####;

   b. The gross revenue conversion factor/tax multiplier is equal to the gross revenue conversion factor/tax multiplier approved in Decision No. #####; and

   c. The applicable depreciation rate(s) is equal to the depreciation rate(s) approved in Decision No. #####.

2. The SIB plant unit cost to be used in calculating the SIB Revenue Requirement shall be the lesser of the installed SIB plant unit cost listed in SIB Plant Table II, or 110 percent (110%) of the SIB plant estimated unit cost listed in the latest Commission approved SIB Plant Table I (*See* Exhibit 2).

3. The amount to be collected by each SIB Surcharge shall be capped annually at five percent (5%) of the revenue requirement authorized in Decision No. #####.

B. Reconciliation and True-Ups

1. The revenue collected pursuant to the SIB Surcharge over the preceding 12 months shall be trued-up and reconciled with the SIB Authorized Revenue for that period.

2. A new SIB Surcharge shall be combined with an existing SIB Surcharge such that a single SIB surcharge and a single SIB Efficiency Credit are shown on a customer's bill.

3. For each 12 month period that a SIB Surcharge is in effect, the Company shall reconcile the amounts collected by the SIB Surcharge with the SIB Authorized Revenue, for that 12 month period, consistent with Schedule B.

4. Any under- or over-collected SIB Authorized Revenues shall be recovered or refunded, without interest, over a 12-month period by means of a SIB True-up Adjustment.

5. Starting with the second annual SIB Surcharge, where there are over- or under-collected balances, such over- or under-collected balances shall be carried over to the next year, and considered in the calculation of the new SIB True-up Adjustment. If, at the time new rates go into effect in the Company's next rate case, there remains an over- or under-collected balance, such balance shall be reset to zero, and addressed in the next rate case.

C. Earnings Test

1. Once a SIB Surcharge is in effect, the Company is required to perform an annual earnings test calculation for each SIB Surcharge request to determine whether the actual rate of return reflected by the operating income for the affected system or division for the relevant 12-month period exceeded the most recently authorized fair value rate of return for the affected system or division.

2. The earnings test shall be:

   a. Based on the most recent available operating income;

   b. Adjusted for any operating revenue and expense adjustments adopted in the most recent general rate case; and

   c. Based on the rate base adopted in the most recent general rate case, updated to recognize changes in plant, accumulated depreciation, contributions in aid of construction, advances in aid of construction, and accumulated deferred income taxes through the most recent available financial statement (quarterly or longer).

V. ADDING PROJECTS TO SIB PLANT TABLE I UNDER EMERGENCY CIRCUMSTANCES

A. The Company may seek Commission approval to add projects to SIB Plant Table I under emergency circumstances. No changes may be made to SIB Plant Table I without Commission approval.

B. Any addition to SIB Plant Table I must be plant investment that maintains or improves existing customer service, system reliability, integrity and safety. Eligible plant additions are limited to plant replacement projects. The costs of extending facilities or capacity to serve new customers are not recoverable through the SIB mechanism.

C. To be eligible for SIB treatment, a project must be SIB Eligible Plant.

D. SIB Eligible Plant must satisfy at least one of the following criteria:

1. Water loss for the system exceeds ten percent (10%), as calculated by the following formula: ((volume of water produced and/or purchased) – (volume of water sold + volume of water put to beneficial use)) divided by (volume of water produced and/or purchased). If the volume of water put to beneficial use is not metered, it shall be established in a reliable, verifiable manner.

2. Plant assets that have remained in service beyond their useful service lives (based on the Company's authorized utility plant depreciation rates) and are in need of

replacement due to being worn out or in a deteriorating condition through no fault of the Company;

3. Any other engineering, operational or financial justification supporting the need for a plant asset replacement, other than the Company's negligence or improper maintenance, including, but not limited to:

   a. A documented increasing level of repairs to, or failures of, a plant asset justifying its replacement prior to reaching the end of its useful service life (e.g. black poly pipe);

   b. Assets that are required to be moved, replaced or abandoned by a governmental agency or political subdivision, if the Company can show that it has made a good faith effort to seek reimbursement for all or part of the costs incurred.

VI. SIB SURCHARGE RATE DESIGN

A. The SIB Surcharge rate design shall be as follows:

1. The SIB Surcharge shall be a fixed monthly surcharge containing a Gross SIB Surcharge and the SIB Surcharge Efficiency Credit as its two components.

2. The SIB Surcharge shall be calculated by dividing the SIB Authorized Revenue by the number of active equivalent 5/8 x 3/4-inch meters at the end of the most recent 12-month period, and shall increase with meter size based on the following meter capacity multipliers:

5/8-inch x 3/4-inch	1.0 times
3/4-inch	1.5 times
1-inch	2.5 times
1-1/2-inch	5 times
2-inch	8 times
3-inch	16 times
4-inch	25 times
6-inch	50 times
8-inch	80 times
10-inch & above	115 times

B. The SIB Surcharge shall apply to all of the Company's metered customers, including private fire service customers.

VII. SIB SURCHARGE NOTICE REQUIREMENTS

A. Thirty days prior to filing each application to implement a SIB Surcharge, the Company shall file a proposed form of notice to Staff for review, and a Summary of what the Company will be requesting in the application. Once the notice is approved by Staff, the Company shall provide a copy of the approved notice to its customers via newsletter or bill insert. After providing notice, the Company shall file a copy of the notice and a description of when and how it provided notice with each application to implement a SIB surcharge. The Summary and Notice shall include at least the following information:

1. The individual Gross SIB Surcharge, by meter size;
2. The individual SIB Surcharge Efficiency Credit, by meter size;
3. The SIB Surcharge, by meter size; and
4. Directions to where the customer may obtain a summary of the projects included in the current SIB Surcharge request, including a description of each project and its cost.

B. A SIB Surcharge shall not become effective until approved by the Commission.

C. The Company shall provide a proposed order for the Commission's consideration.

D. The Company shall notice its customers of the SIB Surcharge approved herein as soon as possible in a form acceptable to Staff and consistent with the notice requirements of Decision No. #####.

E. The Company shall not implement the SIB Surcharge until 30 days after having filed documentation in Docket Control providing the date when all effected customers have been notified of the Commission approved SIB Surcharge.

EXHIBIT 1

Water System Name: PWS ID No.

SIB PLANT TABLE I

Information to be included with SIB-Eligible Project Notification

	NARUC Acct. No. (SIB-eligible plant)	Replacement Plant Description (new Plant) (SIB-eligible plant)					Site (location Description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary. - Replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility. - Replacement of existing plant to address excessive water loss (10% or more). - Replacement of existing plant for other reasons supported by persuasive showing by utility. 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include costs for extending or expanding facilities to serve new customers. 5. Provide reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance and repair/replacement program.
Project No.	**343 T&D Mains** **345 Services** **346 Meters** **348 Hydrants**	Description	Pipe Length / Quantity	Diameter / Size	Material	Installed Cost / Unit (estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct. No.)	Estimated Subtotal Cost (by project)	
Estimated Total Cost										$ -	

EXHIBIT 2

WATER SYSTEM - PWSID NO.
SIB PLANT TABLE II (Page 1a)

Information to be included with SIB-Eligible Completed Project Filings

Project No.	NARUC Acct No:	Replacement Plant Description (installed new plant) (SIB-eligible plant)							Original Plant (Plant Being Retired)				
		Description (Note any changes)	Installed Quantity	Diameter/ Size	Material	Installed Cost/Unit (actual cost)	Actual Cost (by NARUC Acct No)	In-Service Date (provide ADEQ AOC and other related approvals by state and/or Federal agencies when applicable; pictures of installed plant)	Actual Retirement Date	Original In-Service Date	Original Cost	Accumulated Depreciation Reserve (as of the actual retirement date)	Net Value of Retired Plant
	309 Supply Mains												
	NA												
Totals						$ -					$ -	$ -	$ -

WATER SYSTEM - PWSID NO.
SIB PLANT TABLE II (Page 1b)

Information to be included with SIB-Eligible Completed Project Filings

Project No.	NARUC Acct No: 309 Supply Mains	a	b	c	d	e	f	g	h
		Cost/Unit (Estimated) (From Table I)	Cost/Unit (Installed)	Installed Units (Quantity)	Actual Cost (by NARUC Acct) (d) = (b) x (c)	Is (b) less than 110% of (a)? Enter "Yes" or "No"	If (e) is "No," Calculate Allowable Installed Cost: (f)=110% of (a) x (c)	Net Value of Retired Plant	SIB Allowed Cost (h)=(d)-(g) when Column (e) is "Yes" (h)=(f)-(g) when Column (e) is "No"
	NA								
Totals					$ -		$ -	$ -	$ -

WATER SYSTEM - PWSID NO.
SIB PLANT TABLE II (Page 2a)

Information to be included with SIB-Eligible Completed Project Filings

Project No.	NARUC Acct No:	Replacement Plant Description (installed new plant) (SIB-eligible plant)							Original Plant (Plant Being Retired)				
	343 T&D Mains	Description (Note any changes)	Installed Quantity	Diameter/ Size	Material	Installed Cost/Unit (actual cost)	Actual Cost (by NARUC Acct No)	In-Service Date (provide ADEQ AOC and other related approvals by state and/or Federal agencies when applicable; pictures of installed plant)	Actual Retirement Date	Original In-Service Date	Original Cost	Accumulated Depreciation Reserve (as of the actual retirement date)	Net Value of Retired Plant
	NA												
Totals							$ -				$ -	$ -	$ -

WATER SYSTEM - PWSID NO.
SIB PLANT TABLE II (Page 2b)

Information to be included with SIB-Eligible Completed Project Filings

Project No.	NARUC Acct No:	a	b	c	d	e	f	g	h
	343 T&D Mains	Cost/Unit (Estimated) (From Table I)	Cost/Unit (Installed)	Installed Units (Quantity)	Actual Cost (by NARUC Acct) (d) = (b) x (c)	Is (b) less than 110% of (a)? Enter "Yes" or "No"	If (e) is "No," Calculate Allowable Installed Cost: (f)=110% of (a) x (c)	Net Value of Retired Plant	SIB Allowed Cost (h)=(d)-(g) when Column (e) is "Yes" (h)=(f)-(g) when Column (e) is "No"
	NA								
Totals					$ -		$ -	$ -	$ -

WATER SYSTEM - PWSID NO.
SIB PLANT TABLE II (Page 3a)

Information to be included with SIB-Eligible Completed Project Filings

Project No.	NARUC Acct No:	Replacement Plant Description (installed new plant) (SIB-eligible plant)							Original Plant (Plant Being Retired)				
	345 Services	Description (Note any changes)	Installed Quantity	Diameter/ Size	Material	Installed Cost/Unit (actual cost)	Actual Cost (by NARUC Acct No)	In-Service Date (provide ADEQ AOC and other related approvals by state and/or Federal agencies when applicable; pictures of installed plant)	Actual Retirement Date	Original In-Service Date	Original Cost	Accumulated Depreciation Reserve (as of the actual retirement date)	Net Value of Retired Plant
	NA												
Totals							$ -				$ -	$ -	$ -

WATER SYSTEM - PWSID NO.
SIB PLANT TABLE II (Page 3b)

Information to be included with SIB-Eligible Completed Project Filings

Project No.	NARUC Acct No:	a	b	c	d	e	f	g	h
	345 Services	Cost/Unit (Estimated) (From Table I)	Cost/Unit (Installed)	Installed Units (Quantity)	Actual Cost (by NARUC Acct) (d) = (b) x (c)	Is (b) less than 110% of (a)? Enter "Yes" or "No"	If (e) is "No," Calculate Allowable Installed Cost: (f)=110% of (a) x (c)	Net Value of Retired Plant	SIB Allowed Cost (h)=(d)-(g) when Column (e) is "Yes" (h)=(f)-(g) when Column (e) is "No"
	NA								
Totals					$ -		$ -	$ -	$ -

WATER SYSTEM - PWSID NO.
SIB PLANT TABLE II (Page 4a)

Information to be included with SIB-Eligible Completed Project Filings

Project No.	NARUC Acct No:	Replacement Plant Description (installed new plant) (SIB-eligible plant)							Original Plant (Plant Being Retired)				
	346 Meters	Description (Note any changes)	Installed Quantity	Diameter/ Size	Material	Installed Cost/Unit (actual cost)	Actual Cost (by NARUC Acct No)	In-Service Date (provide ADEQ AOC and other related approvals by state and/or Federal agencies when applicable; pictures of installed plant)	Actual Retirement Date	Original In-Service Date	Original Cost	Accumulated Depreciation Reserve (as of the actual retirement date)	Net Value of Retired Plant
	NA												
Totals							$ -				$ -	$ -	$ -

WATER SYSTEM - PWSID NO.
SIB PLANT TABLE II (Page 4b)

Information to be included with SIB-Eligible Completed Project Filings

Project No.	NARUC Acct No: 346 Meters	a	b	c	d	e	f	g	h
		Cost/Unit (Estimated) (From Table I)	Cost/Unit (Installed)	Installed Units (Quantity)	Actual Cost (by NARUC Acct) (d) = (b) x (c)	Is (b) less than 110% of (a)? Enter "Yes" or "No"	If (e) is "No," Calculate Allowable Installed Cost: (f)=110% of (a) x (c)	Net Value of Retired Plant	SIB Allowed Cost (h)=(d)-(g) when Column (e) is "Yes" (h)=(f)-(g) when Column (e) is "No"
	NA								
Totals					$ -		$ -	$ -	$ -

WATER SYSTEM - PWSID NO.
SIB PLANT TABLE II (Page 5a)

Information to be included with SIB-Eligible Completed Project Filings

Project No.	NARUC Acct No:	Replacement Plant Description (installed new plant) (SIB-eligible plant)							Original Plant (Plant Being Retired)				
	348 Hydrants	Description (Note any changes)	Installed Quantity	Diameter/ Size	Material	Installed Cost/Unit (actual cost)	Actual Cost (by NARUC Acct No)	In-Service Date (provide ADEQ AOC and other related approvals by state and/or Federal agencies when applicable; pictures of installed plant)	Actual Retirement Date	Original In-Service Date	Original Cost	Accumulated Depreciation Reserve (as of the actual retirement date)	Net Value of Retired Plant
	NA												
Totals							$ -				$ -	$ -	$ -

WATER SYSTEM - PWSID NO.
SIB PLANT TABLE II (Page 5b)

Information to be included with SIB-Eligible Completed Project Filings

Project No.	NARUC Acct No: 348 Hydrants	a	b	c	d	e	f	g	h
		Cost/Unit (Estimated) (From Table I)	Cost/Unit (Installed)	Installed Units (Quantity)	Actual Cost (by NARUC Acct) (d) = (b) x (c)	Is (b) less than 110% of (a)? Enter "Yes" or "No"	If (e) is "No," Calculate Allowable Installed Cost: (f)=110% of (a) x (c)	Net Value of Retired Plant	SIB Allowed Cost (h)=(d)-(g) when Column (e) is "Yes" (h)=(f)-(g) when Column (e) is "No"
	NA								
Totals					$ -		$ -	$ -	$ -

WATER SYSTEM - PWSID NO.
SIB PLANT TABLE II - SUMMARY (PAGE 6)

Information to be included with SIB-Eligible Completed Project Filings

Project No.	NARUC Acct No. (SIB-eligible Plant) 309 Supply Mains 343 T&D Mains 345 Services 346 Meters 348 Hydrants	Description	1 Actual Cost (from Table II column d)	2 SIB Allowed Cost[1] (from Table II column h)
		Totals	$ -	$ -

[1]Total SIB Allowed Cost to be used in calculating the SIB Revenue Requirement.

EXHIBIT 3

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Calculation of Revenue Requirement & Efficiency Credit
As of December 31, 2014

Line No.		[A] System Name
1		
2	Total Authorized Revenue Requirement - Decision No. 74081	$ -
3	SIB Revenue Cap %	5.00%
4	Annual SIB Revenue Cap	$ -
5	[Ln. 2 x Ln. 3]	
6		
7		
8	Net SIB Rate Base	$ -
9	[Schedule D (CWIP Ledger Summary), p. 9, Col. E, Ln. 23]	
10		
11		
12	Weighted Average Cost of Equity - Decision No. 74081	0.00%
13	Gross Revenue Conversion Factor - Decision No. 74081	0.0000
14	Pre-Tax Weighted Cost of Equity	0.00%
15	[Ln. 12 x Ln. 13]	
16	Weighted Average Cost of Debt - Decision No. 74081	0.00%
17	Pre-Tax Cost of Capital/Required Return on Rate Base	0.00%
18	[Ln. 14 + Ln. 16]	
19	Required Operating Income/After-Tax Return on Rate Base	$ -
20	[Ln. 8 x (Ln. 12 + Ln. 16)]	
21		
22		
23	Required Revenue/Pre-Tax Return on Rate Base	$ -
24	[Ln. 8 x Ln. 17]	
25	Depreciation Expense on SIB Plant (Net of Retirements)	$ -
26	[Sch. D (CWIP Ledger Summary), p. 9, Col. E, Ln. 32]	
27	Total SIB Capital Costs (Pre-Tax Return & Depreciation)	$ -
28	[Ln. 23 + Ln. 25]	
29		
30		
31	**SIB Revenue Requirement**	**$ -**
32	[Lesser of Ln. 4 or Ln. 27]	
33		
34		
35	SIB Efficiency Credit %	-5%
36	**SIB Revenue Requirement Efficiency Credit**	**$ -**
37	[Ln. 31 x Ln. 35]	
38		
39		
40	**SIB True-Up Adjustment**	**$ -**
41	[Sch. B, p. 1, Col. A, Ln. 16]	
42		
43		
44	**SIB Authorized Revenue - Proposed**	**$ -**
45	[Ln. 31 + Ln. 36 + Ln. 40]	
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Calculation of Annual Surcharge
As of December 31, 2014

Line No.		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]
		System Name								
6	Customer Meter Size	Number of Customers - 12/31/2014	Meter Capacity Multiplier	5/8 x 3/4-inch Equivalent Meters [A x B]	**Gross SIB Surcharge** by Meter Size [Ln. 24 x Col. B]	Total Annual Revenue by Meter Size [(A x D) x 12]	**SIB Surcharge Efficiency Credit** by Meter Size [Ln. 29 x Col. B]	Total Annual Credit by Meter Size [(A x F) x 12]	**SIB Surcharge** (net of Efficiency Credit) by Meter Size [Ln. 32 x Col. B]	Total Net Revenue by Meter Size [(A x H) x 12]
8	5/8 x 3/4-inch	TBD	1	TBD	TBD	TBD	TBD	TBD	TBD	TBD
9	1-inch	TBD	2.5	TBD	TBD	TBD	TBD	TBD	TBD	TBD
10	1 1/2-inch	TBD	5	TBD	TBD	TBD	TBD	TBD	TBD	TBD
11	2-inch	TBD	8	TBD	TBD	TBD	TBD	TBD	TBD	TBD
12	3-inch	TBD	16	TBD	TBD	TBD	TBD	TBD	TBD	TBD
13	4-inch	TBD	25	TBD	TBD	TBD	TBD	TBD	TBD	TBD
14	6-inch	TBD	50	TBD	TBD	TBD	TBD	TBD	TBD	TBD
15	8-inch	TBD	80	TBD	TBD	TBD	TBD	TBD	TBD	TBD
16	10-inch	TBD	115	TBD	TBD	TBD	TBD	TBD	TBD	TBD
18	Totals	-		-		$ -		$ -		$ -

22	SIB Revenue Requirement	$ -
23	[Sch. A, p. 1, Ln. 31]	
24	**Gross SIB Surcharge** (Per 5/8 x 3/4-inch Equivalent Meter)	**#DIV/0!**
25	[(Col. E, Ln. 22 ÷ Col. C, Ln. 18) ÷ 12, rounded to nearest $0.01]	
27	SIB Revenue Requirement Efficiency Credit	$ -
28	[Sch. A, p. 1, Ln. 36]	
29	**SIB Surcharge Efficiency Credit** (Per 5/8 x 3/4-inch Equivalent Meter)	**TBD**
30	[(Col. G, Ln. 27 ÷ Col. C, Ln. 18) ÷ 12, rounded to nearest $0.01]	
32	**SIB Surcharge** (Gross SIB Surcharge less SIB Surcharge Efficiency Credit)	**TBD**
33	[Col. D, Ln. 24 + Col. F, Ln. 29]	

EXHIBIT 4

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Calculation of Annual True-Up
As of December 31, 2014

Line No.		[A] System Name
1		
2	SIB Revenue Requirement from Prior 12-Month Surcharge Period	$ -
3		
4	SIB Revenue Requirement Efficiency Credit from Prior 12-Month Surcharge Period	$ -
5		
6	SIB True-up Adjustment from Prior 12-Month Surcharge Period	$ -
7		
8	SIB Authorized Revenue from Prior 12-Month Surcharge Period	$ -
9	[Ln. 2 + Ln. 4 + Ln. 6]	
10		
11		
12	Total Actual SIB Surcharge Revenues from Prior 12-Month Surcharge Period	$ -
13	[Includes Surcharge, Efficiency Credit & True-up]	
14		
15		
16	**SIB True-up Adjustment**	**$ -**
17	[Ln. 8 - Ln. 12]	
18		
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ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Calculation of True-Up Surcharge/(Credit)
As of December 31, 2014

Line No.		[A]	[B]	[C]	[D]	[E]
		System Name				
1						
2						
3					**Individual**	
4				5/8 x 3/4-inch	**SIB True-up**	Total Annual
5		Number of	Meter	Equivalent	**Adjustment**	Surcharge/(Credit)
6	Customer Meter Size	Customers - 12/31/2014	Capacity Multiplier	Meters [A x B]	by Meter Size [Ln. 25 x Col. B]	by Meter Size [(A x D) x 12]
7						
8	5/8 x 3/4-inch	TBD	1	TBD	TBD	TBD
9	1-inch	TBD	2.5	TBD	TBD	TBD
10	1 1/2-inch	TBD	5	TBD	TBD	TBD
11	2-inch	TBD	8	TBD	TBD	TBD
12	3-inch	TBD	16	TBD	TBD	TBD
13	4-inch	TBD	25	TBD	TBD	TBD
14	6-inch	TBD	50	TBD	TBD	TBD
15	8-inch	TBD	80	TBD	TBD	TBD
16	10-inch	TBD	115	TBD	TBD	TBD
17						
18	Totals	-		-		$ -
19						
20						
21						
22	SIB True-up Adjustment					$ -
23	[Sch. B, p. 1, Col. A, Ln. 16]					
24						
25	**Individual SIB True-up Adjustment (Per 5/8 x 3/4-inch Equivalent Meter)**				TBD	
26	[(Col. E, Ln. 22 ÷ Col. C, Ln. 18) ÷ 12]					
27						
28						
29						
30						
31						
32						
33						
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EXHIBIT 5

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Typical Bill Analysis - Residential 5/8" x 3/4" Meter
As of December 31, 2014

Line No.	Gallons Used Per Month	[A] System Name Present Rates	[B] SIB Mechanism Gross SIB Surcharge [Sch. A, p. 2]	[C] SIB Mechanism SIB Surcharge Efficiency Credit [Sch. A, p. 2]	[D] Present Rates Plus SIB [A + B + C]	[E] Net SIB Increase [D - A]	[F] Percent Increase [E ÷ A]
8	0	TBD	TBD	TBD	TBD	TBD	TBD
9	1,000	TBD	TBD	TBD	TBD	TBD	TBD
10	2,000	TBD	TBD	TBD	TBD	TBD	TBD
11	3,000	TBD	TBD	TBD	TBD	TBD	TBD
12	4,000	TBD	TBD	TBD	TBD	TBD	TBD
13	5,000	TBD	TBD	TBD	TBD	TBD	TBD
14	6,000	TBD	TBD	TBD	TBD	TBD	TBD
15	7,000	TBD	TBD	TBD	TBD	TBD	TBD
16	8,000	TBD	TBD	TBD	TBD	TBD	TBD
17	9,000	TBD	TBD	TBD	TBD	TBD	TBD
18	10,000	TBD	TBD	TBD	TBD	TBD	TBD
19	11,000	TBD	TBD	TBD	TBD	TBD	TBD
20	12,000	TBD	TBD	TBD	TBD	TBD	TBD
21	13,000	TBD	TBD	TBD	TBD	TBD	TBD
22	14,000	TBD	TBD	TBD	TBD	TBD	TBD
23	15,000	TBD	TBD	TBD	TBD	TBD	TBD
24	20,000	TBD	TBD	TBD	TBD	TBD	TBD
25	25,000	TBD	TBD	TBD	TBD	TBD	TBD
27	Average Monthly Usage in Gallons	TBD	TBD	TBD	TBD	TBD	TBD
29	Monthly Bill at Average Usage	TBD	TBD	TBD	TBD	TBD	TBD
31	Median Monthly Usage in Gallons	TBD	TBD	TBD	TBD	TBD	TBD
33	Monthly Bill at Median Usage	TBD	TBD	TBD	TBD	TBD	TBD
36	Monthly Basic Service Charge	TBD	TBD	TBD	TBD	TBD	TBD
37	Commodity Charge (per M Gallon)						
38	0 to 3,000 Gallons	TBD	TBD	TBD	TBD	TBD	TBD
39	3,001 to 10,000 Gallons	TBD	TBD	TBD	TBD	TBD	TBD
40	Gallons over 10,000	TBD	TBD	TBD	TBD	TBD	TBD

EXHIBIT 6

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Fair Value Rate Base, Revenue & Rate of Return - Decision No. 74081
As of December 31, 2014

Line No.		[A]	[B]	[C]	[D]	[E]	[F]	[G]
		System Name						
			SIB Mechanism					
		Decision No. 74081	SIB Step-1	SIB Step-2	SIB Step-3	SIB Step-4	SIB Step-5	Decision No. 74081 Plus SIB [A+B+C+D+E+F]
7	Operating Revenue	$ -	$ -	$ -	$ -	$ -	$ -	$ -
9	Operating Expenses							
10	Operations & Maintenance	$ -	$ -	$ -	$ -	$ -	$ -	$ -
11	Depreciation & Amortization	-	-	-	-	-	-	-
12	Taxes Other than Income	-	-	-	-	-	-	-
13	Income Taxes	-	-	-	-	-	-	-
14	Total Operating Expenses	$ -	$ -	$ -	$ -	$ -	$ -	$ -
16	Operating Income	$ -	$ -	$ -	$ -	$ -	$ -	$ -
18	Interest Expense							
19	Weighted Avg. Cost of Debt - Decision No. 74081	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20	Interest Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -
21	[Ln. 19 x Ln. 26]							
23	Net Income	$ -	$ -	$ -	$ -	$ -	$ -	$ -
26	Original Cost Rate Base	$ -	$ -	$ -	$ -	$ -	$ -	$ -
27	[Schedule D (Rate Base), p. 6, Ln. 17]							
29	Return on Rate Base	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
30	[Ln. 16 ÷ Ln. 26]							
32	Authorized Return on Rate Base - Decision No. 74081	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
34	Capital Structure - Decision No. 74081							
35	Debt %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
36	Equity %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
38	Portion of Rate Base Financed with Equity	$ -	$ -	$ -	$ -	$ -	$ -	$ -
39	[Ln. 26 x Ln. 36]							
41	Return on Equity	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
42	[Ln. 23 ÷ Ln. 38]							
44	Authorized Return on Equity - Decision No. 74081	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Fair Value Rate Base, Revenue & Rate of Return - Actual (Rate Review)
Twelve Months Ending December 31, 2014

Line No.		[A]	[B]	[C]	[D]	[E]	[F]	[G]
		System Name						
		Actual - 12-Months Ending 12/31/2014	SIB Mechanism					Actual Results Plus SIB [A+B+C+D+E+F]
			SIB Step-1	SIB Step-2	SIB Step-3	SIB Step-4	SIB Step-5	
7	Operating Revenue	$ -	$ -	$ -	$ -	$ -	$ -	$ -
9	Operating Expenses							
10	Operations & Maintenance	$ -	$ -	$ -	$ -	$ -	$ -	$ -
11	Depreciation & Amortization	-	-	-	-	-	-	-
12	Taxes Other than Income	-	-	-	-	-	-	-
13	Income Taxes	-	-	-	-	-	-	-
14	Total Operating Expenses	$ -	$ -	$ -	$ -	$ -	$ -	$ -
16	Operating Income	$ -	$ -	$ -	$ -	$ -	$ -	$ -
18	Interest Expense							
19	Weighted Avg. Cost of Debt - Decision No. 74081	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20	Interest Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -
21	[Ln. 19 x Ln. 26]							
23	Net Income	$ -	$ -	$ -	$ -	$ -	$ -	$ -
26	Original Cost Rate Base	$ - [1]	$ -	$ -	$ -	$ -	$ -	$ -
27	[Schedule D (Rate Base), p. 6, Ln. 17]							
29	Return on Rate Base	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
30	[Ln. 16 ÷ Ln. 26]							
32	Authorized Return on Rate Base - Decision No. 74081	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
34	Capital Structure - Decision No. 74081							
35	Debt %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
36	Equity %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
38	Portion of Rate Base Financed with Equity	$ -	$ -	$ -	$ -	$ -	$ -	$ -
39	[Ln. 26 x Ln. 36]							
41	Return on Equity	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
42	[Ln. 23 ÷ Ln. 38]							
44	Authorized Return on Equity - Decision No. 74081	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

[1] Includes SIB plant.

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Balance Sheet
As of December 31, 2014

Line No.		[A] Arizona Water Company	[B] System Name[1]
1	Assets		
2			
3	Utility Plant		
4	Gross Utility Plant	$ -	
5	Accumulated Depreciation	-	
6	Net Utility Plant	$ -	
7			
8	Current &Assets		
9	Cash	$ -	
10	Accounts Receivable	-	
11	Materials & Supplies	-	
12	Other	-	
13	Total Current Assets	$ -	
14			
15	Deferred Debits	$ -	
16			
17	Total Assets	$ -	
18			
19	Liabilities		
20			
21	Capitalization		
22	Common Stock	$ -	
23	Capital Surplus	-	
24	Retained Earnings	-	
25	Common Stock Equity	$ -	$ -
26			
27	Long-Term Debt	$ -	$ -
28			
29	Total Capitalization	$ -	$ -
30			
31	Current Liabilities		
32	Accounts Payable	$ -	
33	Accrued Expenses	-	
34	Other	-	
35	Total Current Liabilities	$ -	
36			
37	Deferred Credits		
38	Advances for Construction	$ -	
39	Contributions in Aid of Construction	-	
40	Deferred Income Tax	-	
41	Other	-	
42	Total Deferred Credits	$ -	
43			
44	Total Liabilities	$ -	
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55	[1]Allocated based on ratio of system rate base to total company capitalization.		

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Income Statement
Twelve Months Ending December 31, 2014

Line No.		[A] Arizona Water Company	[B] System Name
1			
2	Operating Revenue	$ -	$ -
3			
4	Operating Expenses		
5	Operations & Maintenance	$ -	$ -
6	Depreciation & Amortization	-	-
7	Taxes Other than Income	-	-
8	Income Taxes	-	-
9	Total Operating Expenses	$ -	$ -
10			
11	Operating Income	$ -	$ -
12			
13	Other (Income) & Deductions	$ -	$ -
14			
15	Interest on Long-Term Debt	$ -	$ -
16	Other Interest & Amortization	-	-
17	Total Interest	$ -	$ -
18			
19	Total Other (Income) & Deductions	$ -	$ -
20			
21	Net Income	$ -	$ -
22			
23			
24			
25			
26			
27			
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29			
30			
31			
32			
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ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Earnings Test
Twelve Months Ending December 31, 2014

Line No.		[A] System Name
1		
2	Operating Revenue	$ -
3		
4	Operating Expenses	
5	Operations & Maintenance	$ -
6	Depreciation & Amortization	-
7	Taxes Other than Income	-
8	Income Taxes	-
9	Total Operating Expenses	$ -
10		
11	Operating Income	$ -
12		
13	Interest Expense	$ -
14		
15	Net Income	$ -
16		
17		
18	Original Cost Rate Base	$ -
19	[Schedule D (Rate Base), p. 6, Ln. 17]	
20		
21	Return on Rate Base	#DIV/0!
22	[Ln. 11 ÷ Ln. 18]	
23		
24	Authorized Return on Rate Base - Decision No. 74081	8.44%
25		
26	Capital Structure - Decision No. 74081	
27	Debt %	0.00%
28	Equity %	0.00%
29		
30	Portion of Rate Base Financed with Equity	$ -
31	[Ln. 18 x Ln. 28]	
32		
33	Return on Equity	#DIV/0!
34	[Ln. 15 ÷ Ln. 30]	
35		
36	Authorized Return on Equity - Decision No. 74081	10.00%
37		
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ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Rate Base
As of December 31, 2014

Line No.		[A]	[B]	[C]	[D]	[E]	[F]
		System Name					
		Decision No. 74081	SIB Plant Increase [Sch. D, p. 9]	Decision 74081 Plus SIB Increase [A + B]	Actual Balance Less SIB Increase - 12/31/2014	SIB Plant Increase	Actual Balance as of 12/31/2014 [D + E]
1							
2	Utility Plant in Service	$ -	$ -	$ -	$ -	$ -	$ -
3	New SIB Plant	-	-	-	-	-	-
4	Total Utility Plant in Service	$ -	$ -	$ -	$ -	$ -	$ -
5							
6	Accumulated Depreciation	-	-	-	-	-	-
7	Net Utility Plant in Service	$ -	$ -	$ -	$ -	$ -	$ -
8							
9	Advances in Aid of Construction	$ -	$ -	$ -	$ -	$ -	$ -
10	Contributions in Aid of Construction	-	-	-	-	-	-
11	Deferred Income Taxes	-	-	-	-	-	-
12	Customer Deposits	-	-	-	-	-	-
13							
14	Working Capital	-	-	-	-	-	-
15	Net Regulatory Asset/(Liability)	-	-	-	-	-	-
16							
17	Total Rate Base	$ -	$ -	$ -	$ -	$ -	$ -
18							
19							
20							
21							
22							
23							
24							
25							
26							
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ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Construction Work in Progress (CWIP) Ledger
As of December 31, 2014

SIB Project No. XX/Work Authorization 1-XXXX

Line No.	[A] Month/Year	[B] Date	[C] Description	[D] Vendor Name	[E] Invoice No. (Hyperlinked)	[F] NARUC Acct. 34301	[G] NARUC Acct. 34501	[H] NARUC Acct. 34601	[I] NARUC Acct. 34801	[J] Total
1										
2	Jan. 2012	1/31/2012	Payables Trx Entry	ABC Contractor	132708	$ -				$ -
3		1/31/2012	JV-20 CWIP OH			-				-
4						$ -	$ -	$ -	$ -	$ -
5										
6	Feb. 2012	2/29/2012	Payables Trx Entry	ABC Contractor	132837	$ -				$ -
7		2/29/2012	JV-01 PAYROLL			-				-
8		2/29/2012	JV-02 PAYROLL TAXES			-				-
9		2/29/2012	JV-09 VEHICLE			-				-
10		2/29/2012	JV-11 AFUDC CWIP			-				-
11		2/29/2012	JV-11 AFUDC CWIP			-				-
12		2/29/2012	JV-20 CWIP OH			-				-
13		3/31/2012	JV-02 PAYROLL TAXES			-				-
14						$ -	$ -	$ -	$ -	$ -
15										
16	Mar. 2012	3/31/2012	JV-01 PAYROLL			$ -				$ -
17		3/31/2012	JV-09 VEHICLE			-				-
18		3/31/2012	JV-11 AFUDC CWIP			-				-
19		3/31/2012	JV-11 AFUDC CWIP			-				-
20		3/31/2012	JV-20 CWIP OH			-				-
21		3/31/2012	JV-02 PAYROLL TAXES				-			-
22		3/31/2012	JV-01 PAYROLL				-			-
23		3/31/2012	JV-20 CWIP OH				-			-
24						$ -	$ -	$ -	$ -	$ -
25										
26	Apr. 2012	4/20/2012	Payables Trx Entry	ABC Contractor	29520072	$ -				$ -
27		4/30/2012	JV-01 PAYROLL			-				-
28		4/30/2012	JV-02 PAYROLL TAXES			-				-
29		4/30/2012	JV-09 VEHICLE			-				-
30		4/30/2012	JV-11 AFUDC CWIP			-				-
31		4/30/2012	JV-11 AFUDC CWIP			-				-
32		4/30/2012	JV-20 CWIP OH			-				-
33		4/30/2012	JV-11 AFUDC CWIP			-	-			-
34		4/30/2012	JV-11 AFUDC CWIP				-			-
35		4/30/2012	JV-20 CWIP OH				-			-
36						$ -	$ -	$ -	$ -	$ -
37										
38	May 2012	5/18/2012	Payables Trx Entry	ABC Contractor	29520091	$ -				$ -
39		5/23/2012	Payables Trx Entry	ABC Contractor	133274	-				-
40		5/31/2012	JV-11 AFUDC CWIP			-				-
41		5/31/2012	JV-11 AFUDC CWIP			-				-
42		5/31/2012	JV-01 PAYROLL			-				-
43		5/31/2012	JV-02 PAYROLL TAXES			-				-
44		5/31/2012	JV-09 VEHICLE			-				-
45		5/31/2012	JV-20 CWIP OH			-				-
46		5/31/2012	JV-11 AFUDC CWIP			-	-			-
47		5/31/2012	JV-11 AFUDC CWIP				-			-
48		5/31/2012	JV-20 CWIP OH				-			-
49						$ -	$ -	$ -	$ -	$ -
50										
51										
52										
53										
54										
55										

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Construction Work in Progress (CWIP) Ledger - Summary
As of December 31, 2014

Line No.		[A]	[B]	[C]	[D]	[E]
		System Name				
1						
2		NARUC	NARUC	NARUC	NARUC	
3		Acct.	Acct.	Acct.	Acct.	
4		34301	34501	34601	34801	Totals
5						
6	SIB Project No. XX/Work Authorization 1-XXXX - Totals	$ -	$ -	$ -	$ -	$ -
7	BLANK					
8	BLANK					
9	BLANK					
10	BLANK					
11	Total SIB Eligible Plant in Service	$ -	$ -	$ -	$ -	$ -
12						
13	Depreciation Rate - Decision No. 74081	1.79%	2.38%	4.55%	1.82%	
14						
15	Accumulated Depreciation on SIB Plant (1/2-Year Convention)	$ -	$ -	$ -	$ -	$ -
16	-[50% x (Ln. 11 x Ln. 13)]					
17						
18	Plant Retirements - Per SIB Plant Table II					
19	Original Cost	$ -	$ -	$ -	$ -	$ -
20	Accumulated Depreciation	-	-	-	-	-
21	Net Value of Retired Plant	$ -	$ -	$ -	$ -	$ -
22						
23	Net SIB Rate Base	$ -	$ -	$ -	$ -	$ -
24	[Ln. 11 + Ln. 15 - Ln. 21]					
25						
26						
27	Annual Depreciation Expense on SIB Plant	$ -	$ -	$ -	$ -	$ -
28	[Ln. 11 x Ln. 13]					
29	Annual Depreciation Expense on Retired Plant	$ -	$ -	$ -	$ -	$ -
30	[Ln. 13 x Ln. 19]					
31						
32	Net SIB Depreciation Expense	$ -	$ -	$ -	$ -	$ -
33	[Ln. 27 - Ln. 29]					
34						
35						
36						
37						
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ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Calculation of Three-Factor Allocation Methodology
Fiscal Year 2014

		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
		2013 Actual			Ratio				2014
Line No.	System	No. of Customers	Gross Plant Less Intangibles	Gross Payroll	Customer	Gross Plant Less Intangibles	Gross Payroll	Total	Three Factor Ratio
1									
2	Superstition	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
3	Cochise	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
4	San Manuel	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
5	Falcon Valley	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
6	Winkelman	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
7	Pinal Valley	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
8	White Tank	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
9	Ajo	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
10	Navajo	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
11	Verde Valley	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
12									
13	Totals	-	$ -	$ -	-	-	-	-	-
14									
15									
16									
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55									

EXHIBIT JDH - 3

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Balance Sheet
As of December 31, 2014

Line No.		[A] TOTAL COMPANY	[B] WESTERN GROUP[1]	[C] PINAL VALLEY
1	ASSETS			
2				
3	UTILITY PLANT			
4	Gross Utility Plant	$ 460,762,483		
5	Less: Accumulated Depreciation	133,914,629		
6	Net Utility Plant	$ 326,847,854		
7				
8	CURRENT ASSETS			
9	Cash on Hand and in Banks	12,521,115		
10	Investments and Special Deposits	2,603		
11	Accounts Receivable	7,322,586		
12	Materials & Supplies	376,600		
13	Other	1,068,163		
14	Total Current Assets	$ 21,291,667		
15				
16	DEFERRED DEBITS	$ 8,645,302		
17				
18	TOTAL ASSETS	$ 356,784,823		
19				
20				
21	LIABILITIES			
22				
23	CAPITALIZATION			
24	Common Stock	2,700,000		
25	Capital Surplus	19,309,347		
26	Retained Earnings	64,949,849		
27	Common Stockholders Equity	$ 86,959,196	$ 32,914,056	$ 26,100,846
28	Long-Term Debt	75,000,000	28,387,500	22,511,288
29	Total Capitalization	$ 161,959,196	$ 61,301,556	$ 48,612,134
30				
31	CURRENT LIABILITIES			
32	Notes Payable	-		
33	Accounts Payable	7,836,113		
34	Accrued Expenses	4,598,321		
35	Other	-		
36	Total Current Liabilities	$ 12,434,434		
37				
38	DEFERRED CREDITS			
39	Advances for Construction	71,760,484		
40	Contributions in Aid of Construction	67,150,963		
41	Off-site Facilities Fees Funding CWIP	1,654,586		
42	Deferred Income Taxes	37,212,622		
43	Other	4,612,518		
44	Total Deferred Credits	$ 182,391,193		
45				
46	TOTAL CAPITAL AND LIABILITIES	$ 356,784,823		
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55	[1]Allocated based on percentage of rate base to total company rate base.			

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Income Statement
As of December 31, 2014

Line No.		[A] TOTAL COMPANY	[B] WESTERN GROUP	[C] PINAL VALLEY
1				
2	OPERATING REVENUE	$ 63,965,775	$ 24,224,110	$ 21,268,742
3				
4	OPERATING EXPENSES			
5	Operation and Maintenance	27,480,235	10,804,910	9,399,520
6	Depreciation	10,096,831	4,450,676	3,620,630
7	Taxes Other than Income	8,622,258	3,482,718	3,153,878
8	Income Taxes	4,989,455	1,540,609	1,430,777
9	Total Operating Expenses	$ 51,188,779	$ 20,278,913	$ 17,604,805
10				
11	OPERATING INCOME	$ 12,776,996	$ 3,945,197	$ 3,663,937
12				
13	OTHER (INCOME) AND DEDUCTIONS			
14	Other (Income) - Net	(499,951)	(189,231)	(165,834)
15				
16	Interest on Long-Term Debt	5,115,500	1,868,679	1,667,318
17	Other Interest and Amortization	(508,135)	(185,620)	(165,619)
18	Total Interest	$ 4,607,365	$ 1,683,059	$ 1,501,699
19				
20	Total Other (Income) and Deductions	$ 4,107,414	$ 1,493,828	$ 1,335,865
21				
22	NET INCOME	$ 8,669,582	$ 2,451,369	$ 2,328,072
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ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Earnings Test
As of December 31, 2014

Line No.		[A] PINAL VALLEY
1		
2	REVENUE	
3	Total Operating Revenue	$ 21,268,742
4		
5	OPERATING EXPENSES	
6	Operation and Maintenance	9,399,520
7	Depreciation	3,620,630
8	Taxes Other than Income	3,153,878
9	Income Taxes	1,430,777
10	Total Operating Expenses	$ 17,604,805
11		
12	OPERATING INCOME/(LOSS)	$ 3,663,937
13		
14	RATE BASE - O.C.L.D. (Includes NCRM Plant)	63,090,489
15	(Sch. 7, Ln. 33)	
16		
17	RATE OF RETURN - O.C.L.D	5.81%
18	(Ln. 12 / Ln. 14)	
19		
20	AUTHORIZED RATE OF RETURN	8.44%
21	(Decision No. 73144)	
22		
23	OPERATING MARGIN	17.23%
24	(Ln. 12 / Ln. 3)	
25		
26	Interest Expense - Net	$ 1,501,699
27		
28	INEREST COVERAGE	3.39
29	[(Ln. 12 + Ln. 9) / Ln. 26]	
30		
31	Other (Income) and Deductions	$ (165,834)
32		
33	Equity Ratio	50.97%
34	(Decision 73144)	
35		
36	Allocated Equity	$ 32,157,222
37	(Ln. 14 x Ln. 33)	
38		
39	RETURN ON EQUITY	7.24%
40	[(Ln. 12 - Ln. 26 - Ln. 31) / Ln. 36]	
41		
42	AUTHORIZED RETURN ON EQUITY	10.00%
43	(Decision No. 73144)	
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ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Rate Review
As of December 31, 2014

Line No.		[A] PINAL VALLEY Per Dec. No. 73144	[B] PINAL VALLEY 12 Mos. Ending 12/31/2014	[C] PINAL VALLEY NCRM Increase	[D] PINAL VALLEY Adjusted with NCRM
1					
2	REVENUE				
3	Total Operating Revenue	$ 19,269,444	$ 21,268,742	$ 1,138,012	$ 22,406,754
4					
5	OPERATING EXPENSES				
6	Operation and Maintenance	9,419,089	9,399,520	-	9,399,520
7	Depreciation	3,286,192	3,620,630	185,900	3,806,530
8	Taxes Other than Income	1,131,893	3,153,878	-	3,153,878
9	Income Taxes	1,494,443	1,430,777	371,662	1,802,439
10	Total Operating Expenses	$ 15,331,617	$ 17,604,805	$ 557,562	$ 18,162,367
11					
12	OPERATING INCOME/(LOSS)	$ 3,937,827	$ 3,663,937	$ 580,450	$ 4,244,387
13					
14	RATE BASE - O.C.L.D.	46,638,551	61,344,293	6,500,000	67,844,293
15	(Sch. 7, Ln. 33)				
16					
17	RATE OF RETURN - O.C.L.D	8.44%	5.97%	8.93%	6.26%
18	(Ln. 12 / Ln. 14)				
19					
20	AUTHORIZED RATE OF RETURN	8.44%	8.44%	8.44%	8.44%
21	(Decision No. 71845)				
22					
23	OPERATING MARGIN	20.44%	17.23%	51.01%	18.94%
24	(Ln. 12 / Ln. 3)				
25					
26	Interest Expense - Net	$ 1,667,318	$ 1,501,699	80,000	1,581,699
27					
28	INEREST COVERAGE	3.26	3.39	11.90	3.82
29	[(Ln. 12 + Ln. 9) / Ln. 26]				
30					
31					
32					
33	Equity Ratio	51.0%	51.0%	51.0%	51.0%
34	(Decision 71845)				
35					
36	Allocated Equity	$ 23,771,669	$ 31,267,186	$ 3,313,050	$ 34,580,236
37	(Ln. 14 x Ln. 33)				
38					
39	RETURN ON EQUITY	9.55%	6.92%	15.10%	7.70%
40	[(Ln. 12 - Ln. 26) / Ln. 36]				
41					
42	AUTHORIZED RETURN ON EQUITY	10.00%	10.00%	10.00%	10.00%
43	(Decision No. 73144)				
44					
45	THREE FACTOR RATIO	0.1019	0.0904	0.0904	0.0904
46					
47					
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ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Revenue Requirement
As of December 31, 2014

Line No.		[A] PINAL VALLEY
1	TEST YEAR DATA	
2		
3	Eligible NCRM Plant in Service	$ 6,500,000
4	Accumulated Depreciation	-
5	(Sch. 8, p. 1)	
6	Eligible NCRM Plant Rate Base	$ 6,500,000
7	Required Rate of Return	8.93%
8		
9	Required Operating Income	$ 580,450
10	(Ln. 6 x Ln. 7)	
11	Revenue Conversion Factor	1.6403
12		
13	Revenue Requirement - Return on Eligible NCRM Plant	$ 952,112
14	(Ln. 9 x Ln. 11)	
15		
16	Depreciation on Eligible NCRM Plant	$ 185,900
17	(Sch. 8, p. 1)	
18		
19	Revenue Requirement - Capital Costs (Step 1)	$ 1,138,012
20	(Ln. 13 + Ln. 16)	
21		
22	Revenue Required - O&M Expenses (Step 2)	$ 1,800,000
23		
24	Total Revenue Required	$ 2,938,012
25		
26		
27		
28		
29		
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32		
33		
34		PINAL VALLEY
35		Current Rates
36		Proposed Rates
37		
38		Decision No. 73144
39		NCRM
40	5/8 X 3/4-INCH RESIDENTIAL METER	Total [B + C]
41	Basic Service Charge	$ 16.00 / $ 1.27 / $ 17.27
42	Commodity Rate (Per M Gallon)	
43	0 - 3,000 Gallons	$ 1.1879 / $ 0.1207 / 1.3086
44	3,001 - 10,000 Gallons	$ 2.1026 / $ 0.1207 / 2.2233
45	Over 10,000 Gallons	$ 3.2590 / $ 0.1207 / 3.3797
46		
47		
48		
49		
50	Average Residential Bill (5/8 x 3/4 meter) - (7,781 gallons of usage)	$ 29.62 / $ 2.21 / $ 31.82
51		
52		
53		
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55		

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Surcharge Calculation
As of December 31, 2014

PINAL VALLEY

Line No.	GROWTH	Customers	M Gallons Sold	M Gallons Sold Per Cust.
4	12/31/2013 (Year 1)	28,206	4,670,181.1	165.6
5	12/31/2014 (Year 2)	28,345	4,759,877.2	167.9
6	Increase/(Decrease)	139	89,696	2.4
7	Percentage Change	0.49%	1.92%	1.42%
8	Average M Gallons		4,715,029.2	

11 INCREMENTAL FIXED COSTS TO BE RECOVERED PER BILL

Line No.	Size	Customers by Meter Size 12/31/2014	12/31/2015	Est. Average Customers (A + B) / 2	Basic Service Charge	Meter Multiples	Equivalent Meters (C X F)	Fixed Increment Monthly (G39 X F)	Annual (C X G) X 12
17	5/8"	26,652	26,783	26,718	**varies**	1.0	26,718	$ 1.27	$ 405,958
18	1"	957	962	960	**varies**	2.5	2,399	3.17	36,448
19	1.5"	-	-	-	**varies**	n/a	-	-	-
20	2"	601	604	603	**varies**	8.0	4,820	10.13	73,237
21	3"	72	72	72	**varies**	16.0	1,152	20.26	17,504
22	4"	34	34	34	**varies**	25.0	850	31.66	12,915
23	6"	27	27	27	**varies**	50.0	1,350	63.31	20,513
24	8"	2	2	2	**varies**	80.0	160	101.30	2,431
25	10"	-	-	-	**varies**	115.0	-	145.61	-
26	Totals	28,345	28,484	28,415			37,448		$ 569,006

29 CALCULATION OF SURCHARGE

Line No.			Minimum Surcharge (F34 X .5)	Commodity Surcharge (F34 X .5)
34	Total Revenue Requirement of DSIC Eligible Plant Capital Costs	$ 1,138,012		
35	50% of Total Revenue Requirement on Line 34 Recoverable through Basic Service Charge		$ 569,006	
36	50% of Total Revenue Requirement on Line 34 Recoverable through Commodity Charge			$ 569,006
38	Equivalent Meters (Col. G, Ln. 26 X 12 Mos.)		449,379	
39	Increment Per Equivalent 5/8" Meter (Col. G, Ln. 35 / Col. G, Ln. 38)		$ 1.27	
41	Average M Gallons (Col. C, Ln. 8)			4,715,029.2
42	Increment Per M Gallon (Col. H, Ln. 36 / Col. H, Ln. 41)			$ 0.1207

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Rate Base
As of December 31, 2014

Line No.		[A] PINAL VALLEY Per Dec. No. 73144	[B] PINAL VALLEY NCRM Plant Increase	[C] PINAL VALLEY Dec. Plus NCRM Plant (A + B)	[D] PINAL VALLEY Actual Balance 12/31/2014	[E] PINAL VALLEY NCRM Plant Increase	[F] PINAL VALLEY Actual Plus NCRM Increase (D + E)
2	NCRM Eligible Plant	$ -	$ 6,500,000	$ 6,500,000	$ -	$ 6,500,000	$ 6,500,000
4	Other Utility Plant in Service	172,895,726	-	172,895,726	172,895,726	-	172,895,726
5	Total Plant in Service	$ 172,895,726	$ 6,500,000	$ 179,395,726	$ 172,895,726	$ 6,500,000	$ 179,395,726
6	(Ln. 2 + Ln. 4)						
8	Accumulated Depreciation	44,260,678	-	44,260,678	44,260,678	-	44,260,678
9	Net Utility Plant	$ 128,635,048	$ 6,500,000	$ 135,135,048	$ 128,635,048	$ 6,500,000	$ 135,135,048
10	(Ln. 5 - Ln. 8)						
12	Advances	36,540,428	-	36,540,428	36,540,428	-	36,540,428
14	Contributions - Net	24,300,021	-	24,300,021	24,300,021	-	24,300,021
16	Deferred Income Tax	12,343,427	-	12,343,427	12,343,427	-	12,343,427
18	Customer Deposits	422,585			422,585		422,585
20	Working Capital Allowance	1,561,902	-	1,561,902	1,561,902	-	1,561,902
21	(Per Dec. 73144)						
23	Net Regulatory Asset/(Liability)	4,753,804			4,753,804		
25	Subtotal Rate Base	$ 61,344,293	$ 6,500,000	$ 63,513,074	$ 61,344,293	$ 6,500,000	$ 63,090,489
26	(Ln. 9 - Ln. 12 - Ln. 14 - Ln. 16 + Ln. 18)						
28	Phoenix Office Allocation	- [1]	-	-	- [1]	-	-
30	Meter Shop Allocation	- [1]	-	-	-	-	-
32	Total Rate Base	61,344,293	6,500,000	63,513,074	61,344,293	6,500,000	63,090,489
33	(Ln. 21 + Ln. 24 + Ln. 26)						

54 [1]Phoenix Office and Meter Shop allocation included in line 4.

Supporting Schedules:

N:\RATES\2015_Rate_Case\Draft Testimony & Exhibits\Harris\JDH Exhibits\JDH-3.xlsx\7-Rate Base
Processing Date: 8/20/2015 6:06 PM

Recap Schedules:

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
CWIP Ledger
As of December 31, 2014

Line No.	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
				PINAL VALLEY				
1								
2	W.A. No.	Month/Year	Date	Description	Vendor Name	Invoice No.	33201	Total
3								
4	1-5000	May-16	5/31/2016	JV-1 PAYROLL			120,000.00	120,000.00
5			5/31/2016	JV-2 PAYROLL TAXES			1,000.00	1,000.00
6			5/31/2016	JV-9 TRANSPORTATION			4,000.00	4,000.00
7							$ 125,000.00	$ 125,000.00
8								
13								
14		Jun-16	6/30/2016	JV-1 PAYROLL			120,000.00	120,000.00
15			6/30/2016	JV-2 PAYROLL TAXES			1,000.00	1,000.00
16			6/30/2016	JV-9 TRANSPORTATION			4,000.00	4,000.00
17			6/30/2016	Payables Trx Entry	ABC CONTRACTING	0100004	6,250,000.00	6,250,000.00
18							$ 6,375,000.00	$ 6,375,000.00
19								
20						Project Totals	$ 6,500,000.00	$ 6,500,000.00
21								
22						Depreciation Rate	2.86%	
23								
24						Annual Depreciation Expense	$ 185,900	$ 185,900
25								
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ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Three Factor Calculation
As of December 31, 2014

Line No.	System	2014 Customers	2014 Gross Plant Less Intangibles	2014 Gross Payroll	Ratios Customers	Ratios Gross Plant Less Intangibles	Ratios Gross Payroll	Total	Three Factor Ratio
1									
2	Superstition	24,412	$ 120,445,755	$ 2,072,433	0.2831	0.2721	0.2744	0.8295	0.2765
3	Cochise	6,464	23,822,987	713,807	0.0750	0.0538	0.0945	0.2233	0.0744
4	San Manuel	1,411	4,899,380	148,243	0.0164	0.0111	0.0196	0.0471	0.0157
5	Falcon Valley	1,934	13,811,200	203,191	0.0224	0.0312	0.0269	0.0805	0.0268
6	Winkelman	146	681,260	15,339	0.0017	0.0015	0.0020	0.0053	0.0018
8	Pinal Valley	28,796	159,141,960	2,344,109	0.3339	0.3595	0.3104	1.0037	0.3346
9	White Tank	2,363	30,762,328	188,201	0.0274	0.0695	0.0249	0.1218	0.0406
10	Ajo	648	2,501,091	64,441	0.0075	0.0056	0.0085	0.0217	0.0072
11	Navajo	9,303	30,652,985	710,021	0.1079	0.0692	0.0940	0.2711	0.0904
12	Verde Valley	10,765	55,999,339	1,092,759	0.1248	0.1265	0.1447	0.3960	0.1320
13					-	-	-	-	-
14					-	-	-	-	-
15					-	-	-	-	-
16					-	-	-	-	-
17					-	-	-	-	-
18					-	-	-	-	-
19					-	-	-	-	-
20									
21	Totals	86,242	$ 442,718,285	$ 7,552,544	1.0000	1.0000	1.0000	3.0000	1.0000
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ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Typical Bill Analysis
As of December 31, 2014

Line No.	Gallons Consumption	[A] Present Rates	[B] Proposed Rates	[C] NCRM Increase	[D] Percent Increase
		PINAL VALLEY			
1					
2	-	$ 16.00	$ 17.27	$ 1.27	7.9%
3	1,000	17.19	18.57	1.39	8.1%
4	2,000	18.38	19.88	1.51	8.2%
5	3,000	19.56	21.19	1.63	8.3%
6	4,000	21.67	23.42	1.75	8.1%
7	5,000	23.77	25.64	1.87	7.9%
8	6,000	25.87	27.86	1.99	7.7%
9	7,000	27.97	30.09	2.11	7.5%
10	8,000	30.08	32.31	2.23	7.4%
11	9,000	32.18	34.53	2.35	7.3%
12	10,000	34.28	36.75	2.47	7.2%
13	11,000	37.54	40.13	2.59	6.9%
14	12,000	40.80	43.51	2.71	6.7%
15	13,000	44.06	46.89	2.84	6.4%
16	14,000	47.32	50.27	2.96	6.2%
17	15,000	50.58	53.65	3.08	6.1%
18	20,000	66.87	70.55	3.68	5.5%
19	25,000	83.17	87.45	4.28	5.2%
20					
21					
22	Average Residential Consumption	7,781	7,781		
23					
24	Residential Bill at Average Consumption	$ 29.62	$ 31.82	$ 2.21	7.4%
25					
26					
27					
28					
29					
30	Basic Service Charge	$ 16.00	$ 17.27	$ 1.27	7.9%
31					
32	Commodity Rate (per M Gallon)				
33	0 - 3,000 Gallons	1.1879	1.3086	0.1207	10.2%
34	3,001 - 10,000 Gallons	2.1026	2.2233	0.1207	5.7%
35	Over 10,000 Gallons	3.2590	3.3797	0.1207	3.7%
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EXHIBIT JDH - 4

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Off-site Facilities Fee Overview

Line No.	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]
1	ESTIMATED OFF-SITE FACILITIES										
2					Estimated						
3					Cost						
4											
5		Real Property & Right of Way			750,000						
6		Wells			161,000						
7		Pumping Equipment			459,000						
8		Treatment Equipment			1,097,000						
9		Transmission and Distribution Mains			174,000						
10											
11				Total:	$2,641,000						
12											
13											
14		Off-Site Facilities Fee						Estimated			
15		by Meter Size									
16		Meter	Meter				No. of	Annual	Cumulative	Construction	Fund
17		Size	Multiplier	Fee		Year	Customers	Fees	Fees	Expenditures	Balance
18						2016	2,657	340,000	340,000	-	340,000
19		5/8 & 3/4-inch	1.0	$2,500		2017	2,800	357,500	697,500	750,000	(52,500)
20		3/4-inch *	1.5	$3,750		2018	2,951	377,500	1,075,000	1,891,000	(1,566,000)
21		1-inch	2.5	$6,250		2019	3,110	397,500	1,472,500	-	(1,168,500)
22		1.5-inch	5.0	$12,500		2020	3,278	420,000	1,892,500	-	(748,500)
23		2-inch	8.0	$20,000		2021	3,455	442,500	2,335,000	-	(306,000)
24		3-inch	16.0	$40,000		2022	3,642	467,500	2,802,500	-	161,500
25		4-inch	25.0	$62,500							
26		6-inch & Larger	50.0	$125,000							
27											
28											
29											
30		* The fee for Residential customers with a 3/4-inch meter is $2,500									
31											
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EXHIBIT JDH - 5

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Off-site Facilities Fee Comparison

Line No.	[A]		[B]
1	Liberty Utilities	$	1,800
2			
3	City of Buckeye	$	2,302
4			
5	***White Tank Service Area***	***$***	***2,500***
6			
7	City of Phoenix	$	2,726
8			
9	City of Glendale	$	2,761
10			
11	Epcor	$	3,280
12			
13	City of Peoria	$	4,068
14			
15	City of Goodyear	$	4,789
16			
17	Average (excluding proposed White Tank		
18	Service Area)	$	3,104
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EXHIBIT JDH - 6

ARIZONA WATER COMPANY

TARIFF SCHEDULE – OFF-SITE FACILITIES FEE (WATER)
Filed by: William M. Garfield
Title: President
Date of Original Filing: August 7, 2015
System(s): **WHITE TANK**

A.C.C. No.
Cancelling A.C.C. No.
Tariff or Schedule No.
Filed: August 7, 2015
Effective:

I. Purpose and Applicability

The purpose of the off-site facilities fees payable to Arizona Water Company ("the Company") pursuant to this tariff is to equitably apportion the costs of constructing additional off-site facilities necessary to provide water production, treatment, delivery, recharge, recovery, storage and pressure among all new service connections. These charges are applicable to all new service connections established after the effective date of this tariff undertaken via Main Extension Agreements or requests for service not requiring a Main Extension Agreement. The charges are one-time charges and are payable as a condition to Company's establishment of service, as more particularly provided below.

II. Definitions

Unless the context otherwise requires, the definitions set forth in R-14-2-401 of the Arizona Corporation Commission's ("Commission") rules and regulations governing water utilities shall apply in interpreting this tariff schedule.

"Applicant" means any party entering into an agreement with Company for the installation of water facilities to serve new service connections, including Developers and/or Builders of new residential subdivisions and/or commercial and industrial properties.

"CAP Water" means water from the Central Arizona Project provided directly or indirectly to the Company.

"Company" means Arizona Water Company.

"Main Extension Agreement" means any agreement whereby an Applicant agrees to advance the costs of the installation of water facilities necessary for the Company to serve new service connections within a development, or installs such water facilities necessary to serve new service connections and transfer ownership of such water facilities to the Company, which agreement shall require the approval of the Commission pursuant to A.A.C. R-14-2-406, and shall have the same meaning as "Water Facilities Agreement" or "Line Extension Agreement."

"Off-site Facilities" means water treatment facilities, including treatment of CAP Water and other available water supplies, recharge and recovery facilities, storage tanks and related appurtenances and equipment necessary for proper operation of such water treatment facilities, including engineering and design costs. Off-site facilities may also include booster pumps, wells for recovery of stored CAP water or other groundwater supplies, pressure tanks, transmission mains and related appurtenances and equipment necessary for proper operation of such facilities if these facilities are not for the exclusive use of the applicant and will benefit the entire water system.

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"Service Connection" means and includes all service connections for single-family residential or commercial, industrial other uses, regardless of meter size.

III. Off-Site Water Facilities Fee

For each new service connection, the Company shall collect an off-site facilities fee derived from the following table:

OFF-SITE FACILITIES FEE TABLE

		Total Fee	
Meter Size	**Size Factor**	**Residential**	**All Other Classes**
5/8" x 3/4 "	1	$2,500	$2,500
3/4"	1.5	$2,500	$3,750
1"	2.5	$6,250	$6,250
1-1/2 "	5	$12,500	$12,500
2"	8	$20,000	$20,000
3"	16	$40,000	$40,000
4"	25	$62,500	$62,500
6" or larger	50	$125,000	$125,000

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IV. Terms and Conditions

(A) Assessment of One Time Off-Site Facilities Fee: The off-site facilities fee may be assessed only once per parcel, service connection, or lot within a subdivision (similar to meter and service line installation charge). These charges are not applicable to additional service connections that are established as back-up connections, under the condition that these service connections are not to be used at the same time.

(B) Use of Off-Site Facilities Fee: Off-site facilities fees may only be used to pay for capital items of off-site facilities or for repayment of loans obtained to fund the cost of installation of off-site facilities. Off-site facilities fees shall not be used to cover repairs, maintenance, or operational costs. The Company shall record amounts collected under tariff as Contributions in Aid of Construction ("CIAC"); however, such amounts shall not be deducted from rate base until such amounts have been expended for utility plant.

(C) Time of Payment:

1) For those requiring a Main Extension Agreement: In the event that the Applicant is required to enter into a Main Extension Agreement, whereby the Applicant agrees to advance the

costs of installing mains, valves, fittings, hydrants and other on-site improvements or construct such improvements in order to extend service in accordance with R-14-2-406(B), payment of the off-site facilities fees required hereunder shall be made by the Applicant no later than 15 calendar days after receipt of notification from the Company that the Utilities Division of the Arizona Corporation Commission has approved the Main Extension Agreement in accordance with R-14-2-406(M).

2) For those connecting to an existing main: In the event that the Applicant is not required to enter into a Main Extension Agreement, the off-site facilities fee charges hereunder shall be due and payable at the time the meter and service line installation fee is due and payable.

(D) Off-Site Facilities Construction By Developer: Company and Applicant may agree to construction of off-site facilities necessary to serve a particular development by Applicant, which facilities are then conveyed to Company. In that event, Company shall credit the total cost of such off-site facilities as an offset to off-site facilities fees due under this Tariff. If the total cost of the off-site facilities constructed by Applicant and conveyed to Company is less than the applicable off-site facilities fees under this Tariff, Applicant shall pay the remaining amount of off-site facilities fees owed hereunder. If the total cost of the off-site facilities contributed by Applicant and conveyed to Company is more than the applicable off-site facilities fees under this Tariff, Applicant shall be refunded the difference upon acceptance of the off-site facilities by the Company.

(E) Failure to Pay Charges; Delinquent Payments: The Company will not be obligated to make an advance commitment to provide or actually provide water service to any Applicant in the event that the Applicant has not paid in full all charges hereunder. Under no circumstances will the Company set a meter or otherwise allow service to be established if the entire amount of any payment due hereunder has not been paid.

(F) Large Subdivision and/or Development Projects: In the event that the Applicant is engaged in the development of a residential subdivision and/or development containing more than 150 lots, the Company may, in its discretion, agree to payment of off-site facilities fees in installments. Such installments may be based on the residential subdivision and/or development's phasing, and should attempt to equitably apportion the payment of charges hereunder based on the Applicant's construction schedule and water service requirements. In the alternative, the Applicant shall post an irrevocable letter of credit in favor of the Company in a commercially reasonable form, which may be drawn by the Company consistent with the actual or planned construction and hook up schedule for the subdivision and/or development.

(G) Off-Site Facilities Fees Non-refundable: The amounts collected by the Company as off-site facilities fees shall be non-refundable contributions in aid of construction.

(H) Use of Off-Site Facilities Fees Received: All funds collected by the Company as off-site facilities fees shall be deposited into a separate interest bearing bank account and used solely for the purposes of paying for the costs of installation of off-site facilities, including repayment of loans obtained for the installation of off-site facilities that will benefit the entire water system.

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(I) Off-Site Facilities Fee in Addition to On-site Facilities: The off-site facilities fee shall be in addition to any costs associated with the construction of on-site facilities under a Main Extension Agreement.

(J) Disposition of Excess Funds: After all necessary and desirable off-site facilities are constructed utilizing funds collected pursuant to this tariff, or if the off-site facilities fee tariff has been terminated by order of the Arizona Corporation Commission, any funds remaining in the bank account shall be refunded. The manner of the refund shall be determined by the Commission at the time a refund becomes necessary.

(K) Fire Flow Requirements: In the event the Applicant for service has fire flow requirements that require additional facilities not covered by this tariff, such additional facilities shall be constructed under a separate Main Extension Agreement as a non- refundable contribution and shall be in addition to the off-site facilities fees.

(L) Status Reporting Requirements to the Commission: The Company shall submit a calendar year off-site facilities fee status report each January 31st to Docket Control for the prior twelve (12) month period, beginning January 31, 20__, until the off-site facilities fee tariff is no longer in effect. This status report shall contain a list of all customers that have paid the off-site facilities fee, the amount each has paid, the physical location/address of the property in respect of which such fee was paid, the amount of money spent from the account, the amount of interest earned on the funds within the tariff account, and a list of all facilities that have been installed with the tariff funds during the 12 month period.

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EXHIBIT JDH - 7

ARIZONA WATER COMPANY

TARIFF SCHEDULE – OFF-SITE FACILITIES FEE (WATER)
Filed by: William M. Garfield
Title: President
Date of Original Filing: April 30, 2012
System(s): **PINAL VALLEY (CASA GRANDE, COOLIDGE, STANFIELD)**

A.C.C. No.
Cancelling A.C.C. No. 527
Tariff or Schedule No. FF-101
Filed:
Effective:

I. Purpose and Applicability

The purpose of the off-site facilities fees payable to Arizona Water Company ("the Company") pursuant to this tariff is to equitably apportion the costs of constructing additional off-site facilities necessary to provide water production, treatment, delivery, recharge, recovery, storage and pressure among all new service connections. These charges are applicable to all new service connections established after the effective date of this tariff undertaken via Main Extension Agreements or requests for service not requiring a Main Extension Agreement. The charges are one-time charges and are payable as a condition to Company's establishment of service, as more particularly provided below.

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Unless the context otherwise requires, the definitions set forth in R-14-2-401 of the Arizona Corporation Commission's ("Commission") rules and regulations governing water utilities shall apply in interpreting this tariff schedule.

"Applicant" means any party entering into an agreement with Company for the installation of water facilities to serve new service connections, including Developers and/or Builders of new residential subdivisions and/or commercial and industrial properties.

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1"	2.5	$8,750	$8,750
1-1/2 "	5	$17,500	$17,500
2"	8	$28,000	$28,000
3"	16	$56,000	$56,000
4"	25	$87,500	$87,500
6" or larger	50	$175,000	$175,000

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(A) Assessment of One Time Off-Site Facilities Fee: The off-site facilities fee may be assessed only once per parcel, service connection, or lot within a subdivision (similar to meter and service line installation charge). These charges are not applicable to additional service connections that are established as back-up connections, under the condition that these service connections are not to be used at the same time.

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2) For those connecting to an existing main: In the event that the Applicant is not required to enter into a Main Extension Agreement, the off-site facilities fee charges hereunder shall be due and payable at the time the meter and service line installation fee is due and payable.

(D) Off-Site Facilities Construction By Developer: Company and Applicant may agree to construction of off-site facilities necessary to serve a particular development by Applicant, which facilities are then conveyed to Company. In that event, Company shall credit the total cost of such off-site facilities as an offset to off-site facilities fees due under this Tariff. If the total cost of the off-site facilities constructed by Applicant and conveyed to Company is less than the applicable off-site facilities fees under this Tariff, Applicant shall pay the remaining amount of off-site facilities fees owed hereunder. If the total cost of the off-site facilities contributed by Applicant and conveyed to Company is more than the applicable off-site facilities fees under this Tariff, Applicant shall be refunded the difference upon acceptance of the off-site facilities by the Company.

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(F) Large Subdivision and/or Development Projects: In the event that the Applicant is engaged in the development of a residential subdivision and/or development containing more than 150 lots, the Company may, in its discretion, agree to payment of off-site facilities fees in installments. Such installments may be based on the residential subdivision and/or development's phasing, and should attempt to equitably apportion the payment of charges hereunder based on the Applicant's construction schedule and water service requirements. In the alternative, the Applicant shall post an irrevocable letter of credit in favor of the Company in a commercially reasonable form, which may be drawn by the Company consistent with the actual or planned construction and hook up schedule for the subdivision and/or development.

(G) Off-Site Facilities Fees Non-refundable: The amounts collected by the Company as off-site facilities fees shall be non-refundable contributions in aid of construction.

(H) Use of Off-Site Facilities Fees Received: All funds collected by the Company as off-site facilities fees shall be deposited into a separate interest bearing bank account and used solely for the purposes of paying for the costs of installation of off-site facilities, including repayment of loans obtained for the installation of off-site facilities that will benefit the entire water system.

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(J) Disposition of Excess Funds: After all necessary and desirable off-site facilities are constructed utilizing funds collected pursuant to this tariff, or if the off-site facilities fee tariff has been terminated by order of the Arizona Corporation Commission, any funds remaining in the bank account shall be refunded. The manner of the refund shall be determined by the Commission at the time a refund becomes necessary.

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(L) Status Reporting Requirements to the Commission: The Company shall submit a calendar year off-site facilities fee status report each January 31st to Docket Control for the prior twelve (12) month period, beginning January 31, 20__, until the off-site facilities fee tariff is no longer in effect. This status report shall contain a list of all customers that have paid the off-site facilities fee, the amount each has paid, the physical location/address of the property in respect of which such fee was paid, the amount of money spent from the account, the amount of interest earned on the funds within the tariff account, and a list of all facilities that have been installed with the tariff funds during the 12 month period.

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EXHIBIT JDH - 8

Approved
June 4, 2015

CENTRAL ARIZONA PROJECT
FINAL 2015-2016 RATE SCHEDULE

DELIVERY RATES FOR VARIOUS CLASSES OF WATER SERVICE

Units = $/ acre-foot

(The Letter Designations in the Formulas Refer to the Rate Components Shown Below)

		Firm	Firm	Advisory			
	2014	**2015**	**2016**	2017	2018	2019	2020
Municipal and Industrial							
Long Term Subcontract (B+C) [1]	$ 146	**$ 157**	**$ 161**	$ 166	$ 171	$ 174	$ 196
Non-Subcontract (A+B+C)[2]	166	**179**	**184**	190	196	199	221
Recharge (A+B+C) [3]	166	**179**	**184**	190	196	199	221
AWBA Interstate Recharge (A+B+C+D) [4]	189	**n.p.**	**n.p.**	n.p.	n.p.	n.p.	n.p.
Federal (B+C)[5]	$ 146	**$ 157**	**$ 161**	$ 166	$ 171	$ 174	$ 196
Agricultural							
Settlement Pool (C) [6]	$ 67	**$ 75**	**$ 76**	$ 79	$ 81	$ 82	$ 99
Agricultural Incentives [6]							
Meet Settlement Pool Goals	(14)	**(18)**	**(15)**	(14)	(12)	(9)	(22)
Meet AWBA/CAGRD GSF Goals	(2)	**(2)**	**(2)**	(2)	(2)	(2)	(2)
Meet Recovery Goals	(2)	**(2)**	**(2)**	(2)	(2)	(2)	(2)

RATE COMPONENTS

Units = $/acre-foot

		Firm	Firm	Advisory			
	2014	**2015**	**2016**	2017	2018	2019	2020
Capital Charges							
(A) Municipal and Industrial - Long Term Subcontract [7]	$ 20	**$ 22**	**$ 23**	$ 24	$ 25	$ 25	$ 25
Delivery Charges							
(B) Fixed OM&R [8]	$ 79	**$ 82**	**$ 85**	$ 87	$ 90	$ 92	$ 97
(C) Pumping Energy Rate 1 [9]	67	**75**	**76**	79	81	82	99
(D) Property Tax Equivalency [10]	23	**n.p.**	**n.p.**	n.p.	n.p.	n.p.	n.p.

DIRECT UNDERGROUND WATER STORAGE

Units = $/acre-foot

		Firm	Firm	Advisory			
	2014	**2015**	**2016**	2017	2018	2019	2020
Underground Water Storage O&M [11]							
Phoenix AMA	$ 8	**$ 9**	**$ 10**	$ 12	$ 13	$ 14	$ 15
Tucson AMA	15	**15**	**15**	15	15	15	15
Underground Water Storage Capital Charge [12]							
Phoenix AMA	$ 15	**$ 15**	**$ 15**	$ 15	$ 15	$ 15	$ 15
Tucson AMA	9	**9**	**9**	9	9	9	9

Approved
June 4, 2015

CENTRAL ARIZONA PROJECT
FINAL 2015-2016 RATE SCHEDULE

NOTES:

1) Long-Term Municipal and Industrial (M&I) Subcontract include those users that hold a M&I subcontract.
2) Non-Subcontract includes M&I users that are taking water under an agreement other than a subcontract and may also be referred to as "Excess" water. It is administered according to CAP's Access to Excess policy.
3) Recharge includes the Arizona Water Banking Authority, CAGRD, BOR and M&I subcontract holders and other Arizona entities who have valid Arizona Department of Water Resources water storage permits and accrue long-term storage credits. It is administered according to CAP's Access to Excess policy.
4) The AWBA Interstate Recharge rate is currently not published (n.p.) and will be provided upon request as there is not any anticipation of water available for this class.
5) Federal water may also be referred to as "Indian" water.
6) Rate is the Pumping Energy Rate 1 component. Incentives may be earned for meeting delivery goals in three areas. Any incentives earned are applied to Settlement Pool deliveries.
7) For M&I subcontract water, the Capital Charge is paid on full allocation regardless of amount delivered and not included in delivery rates.
8) Fixed O&M costs divided by projected total water volumes plus components to fund capital replacements and a rate stabilization reserve. This amount is collected on all ordered water whether delivered or not.
9) The energy rate applies to all actual water volumes as opposed to scheduled. The calculation is pumping energy costs divided by projected volumes.
10) The rate is based upon the tax levy for the previous elapsed tax year divided by the average water deliveries (excluding Federal deliveries and water storage credits) for the three previous completed delivery years (e.g., for 2012, the tax equivalency is the levy for the 2010-2011 tax year divided by the average water deliveries for 2008, 2009 and 2010). This rate is currently not published (n.p.) and is available upon request, although it is not anticipated there will be water available for this class.
11) Underground Water Storage O&M is paid by all direct recharge customers using CAP recharge sites.
12) Underground Water Storage Capital Charge is paid by all direct recharge customers except AWBA for M&I firming, the CAGRD, municipal providers within the CAP service area and co-owners of CAWCD recharge facilities using no more than their share of capacity.

EXHIBIT JDH - 9

ARIZONA WATER COMPANY
Docket No. W-01445A-15-0277
Purchased Water Costs - Recharge and Recovery

Pinal Valley Purchased Water Costs - Recharge and Recovery

Year	Acre Feet Delivered	Capital Charges	Delivery Charges	Groundwater Savings Facility Offset Payment	Purchased Water Cost	Amortization of Additional Deferred CAP M&I Charges	Total Purchased Water Cost Recharge and Recovery	Year over Year Increase
Test Year *	5,000	$ 22	$ 157	$ (36)	$ 715,000	$ 219,941	$ 934,941	N/A
2016 *	6,000	$ 23	$ 161	$ (36)	$ 888,000	$ 392,488	$ 1,280,488	$ 345,547
2017 *	7,000	$ 24	$ 166	$ (36)	$ 1,173,400	$ 591,675	$ 1,765,075	$ 484,587
2018 *	8,000	$ 25	$ 171	$ (36)	$ 1,474,400	$ 765,119	$ 2,239,519	$ 474,444
2019 *	8,956	$ 25	$ 174	$ (36)	$ 1,747,828	$ 765,119	$ 2,512,947	$ 273,428
2020	8,956	$ 25	$ 196	N/A	$ 1,979,276	$ 765,119	$ 2,744,395	$ 231,448

White Tank Purchased Water Costs - Recharge and Recovery

Year	Acre Feet Delivered	Capital Charges	Delivery Cost per Acre Foot	Groundwater Savings Facility Offset Payment	Total Delivery Cost	Amortization of Additional Deferred CAP M&I Charges	Total Purchased Water Cost Recharge and Recovery	Year over Year Increase
2016 *	375	$ 23	$ 161	$ (16)	$ 63,000	$ 36,739	$ 99,739	N/A
2017 *	500	$ 24	$ 166	$ (16)	$ 87,000	$ 50,859	$ 137,859	$ 38,120
2018	625	$ 25	$ 171	N/A	$ 122,500	$ 66,731	$ 189,231	$ 51,372
2019	750	$ 25	$ 174	N/A	$ 149,250	$ 84,634	$ 233,884	$ 44,653
2020	968	$ 25	$ 196	N/A	$ 213,928	$ 138,077	$ 352,005	$ 118,121

* CAP water delivered to Groundwater Savings Facilities per table below:

	Pinal Valley	White Tank
Test Year	5,000 AF	375 AF
2016	6,000 AF	500 AF
2017	4,350 AF	N/A
2018	2,600 AF	N/A
2019	956 AF	N/A

EXHIBIT JDH - 10

ARIZONA WATER COMPANY
Docket No. W-1445A-15-0277
CAP Water Surcharge Update

Line No.		[A]	Pinal Valley [B]	Pinal Valley [C]	White Tank [D]	White Tank [E]
1	Under / (Over) Recovery of Prior Year CAP Surcharge					
2						
3	2015 Annual Costs		$ 934,941			$ 0
4						
5	2015 CAP Surcharge Revenues		$ 0			$ 0
6						
7	CAP Water Expense in Base Rates		$ (934,941)			$ 0
8						
9	Under / (Over) Recovery of Prior Year CAP Surcharge			$ 0		$ 0
10	[ln. 3 + ln. 5 + ln. 7]					
11						
12	2016 Scheduled CAP Deliveries - Recharge and Recovery (Acre-Feet "AF")	6,000			375	
13						
14	2016 CAP Rates					
15						
16	M&I Capital Charge	$ 23.00 AF			$ 23.00 AF	
17						
18	M&I Delivery Charge	$ 161.00 AF			$ 161.00 AF	
19						
20	Total [ln. 16 + ln. 18]	$ 184.00			$ 184.00	
21						
22						
23	Purchased CAP Water Expense - Groundwater Storage		$ 1,104,000			$ 69,000
24	[ln. 12 x ln. 20]					
25						
26	Less:					
27						
28	Contractual Payments from Groundwater Savings Facilities ("GSF")	$ (36.00) AF			$ (16.00) AF	
29						
30						
31	Total GSF Credit [ln. 12 x ln. 28]		$ (216,000)			$ (6,000)
32						
33						
34	Net Purchased CAP Water Expense - Recharge and Recovery			$ 888,000		$ 63,000
35	[ln. 23 + ln. 31]					
36						
37						
38	Amortization of Additional Deferred CAP M&I Charges			$ 392,488		$ 36,739
39	[Schedule 2, ln. 48]					
40						
41						
42	Total CAP Water Expense - Recharge and Recovery			$ 1,280,488		$ 99,739
43	[ln. 9 + ln. 34 + ln. 38]					
44						
45	CAP Water Expense in Base Rates			$ (934,941)		$ -
46						
47	2016 CAP Surcharge Revenue			$ 345,547		$ 99,739
48	[ln. 42 - ln. 45]					
49						
50	Thousand Gallons Sold - 2015			4,712,068.4		380,732.7
51						
52	CAP Surcharge Monthly Rate per Thousand Gallons Sold			$ 0.073		$ 0.262
53	[ln. 48 / ln. 50]					
54						
55	Average Residential Usage (thousand gallons)			7.8		11.7
56						
57	Monthly CAP Surcharge (Average Residential Use)			$ 0.57		$ 3.07
58	[ln. 52 X ln. 55]					
59						
60						

EXHIBIT JDH - 11

TABLE OF CONTENTS

I General Description 2

II Components of the CAP Water Surcharge 2

III CAP Water Surcharge Reporting 3

SCHEDULES

CAP Water Surcharge Update ..... SCHEDULE 1

Deferred CAP M&I Charges ..... SCHEDULE 2

CAP Water Surcharge Reconciliation - Revenue and Expense ..... SCHEDULE 3

CAP Water Surcharge Reconciliation - Water Sales ..... SCHEDULE 4

CAP Water Surcharge Tariff ..... SCHEDULE 5

I. GENERAL DESCRIPTION

The purpose of the CAP Water Surcharge mechanism is to recover the difference in the cost of CAP water for recharge and recovery and the adjusted 2014 test year cost as approved in this case, Docket No. W-01445A-15-0277. Under the Arizona Water's proposed CAP Water Surcharge Arizona Water will make annual filings (by January 31 each year) to adjust the CAP Water Surcharge rate. The CAP Water Surcharge rate will be billed on a per thousand gallons sold basis similar to a commodity rate for all customers. The CAP Water Surcharge will appear on customers' bills as a separate line item labeled "CAP Water Surcharge". This rate will be adjusted annually (effective March 1) to true up the previous year's activity and reflect the current year's costs.

II. COMPONENTS OF THE CAP WATER SURCHARGE

The CAP Water Surcharge Mechanism will include the following:

- Prior Year Under/(Over) Recovery — This section accounts for the under/(over) recovery of the prior year's costs through the surcharge. It encompasses all of the previous year's revenues and expense and shows the calculation of the under/(over) collection as well as the calculation to either (credit) or charge customers for the (over)/under collection in the previous year. It is supported by a schedule showing monthly revenue/expense calculations and a sheet outlining the previous year's customer consumption by month. The calculation in this section results in the total Prior Year Under/(Over) Recovery.

- Estimated Payments/Expense for the Applicable Year — This section estimates the payments and credits that will occur in the applicable year. It includes the amount, in acre-feet, of CAP water that will be recharged and recovered in that year, the M&I capital and delivery cost for that CAP water and the cost or (credit) associated with storing CAP in a groundwater

savings facility. The calculation in this section results in the total Net Purchased CAP Water Expense - Groundwater Storage.

- Amortization of Additional Deferred CAP M&I Charges — This amount represents the amount of Deferred CAP M&I Charges being amortized in the applicable year. It is supported by a schedule showing the calculation of this amount.

- CAP Water Surcharge Revenue — This section calculates the amount of CAP Water Surcharge Revenue. The total Prior Year Under/(Over) Recovery is added to the Estimated Payments/Expense for the Applicable Year plus the Amortization of Additional Deferred CAP M&I Charges. The amount of CAP Water expense for Recharge and Recovery approved in this rate case is subtracted to arrive at the CAP Water Surcharge Revenue.

- Current Year Surcharge Calculation — This section uses the CAP Water Surcharge Revenue calculated above and divides it by total water sales from the prior year to arrive at a per thousand gallons rate for the current year's CAP Water Surcharge.

- Monthly CAP Water Surcharge per Average Residential Customer — This section multiplies the CAP Water Surcharge rate times the average monthly residential usage to determine the monthly CAP Water Surcharge per Average Residential Customer.

III. REPORTING

The Company shall file its first surcharge request by January 31, 20___ to be effective on March 1 20___.

On or before January 31 of each year thereafter Arizona Water will submit to the Commission as a compliance item in this docket a report showing its collections under the CAP Water Surcharge that includes a calculation of any under/(over) recovery with detail showing each component's

contribution to the change in balance from the prior year. This will be in a form similar to the attached Schedules 1 - 4 and will include a revised tariff similar to Schedule 5.

ARIZONA WATER COMPANY
Docket No. W-1445A-15-0277
CAP Water Surcharge Update

Line No.		[A]	Pinal Valley [B]	Pinal Valley [C]	White Tank [D]	White Tank [E]
1	Under / (Over) Recovery of Prior Year CAP Surcharge					
2						
3	2015 Annual Costs		$ 934,941			$ 0
4						
5	2015 CAP Surcharge Revenues		$ 0			$ 0
6						
7	CAP Water Expense in Base Rates		$ (934,941)			$ 0
8						
9	Under / (Over) Recovery of Prior Year CAP Surcharge			$ 0		$ 0
10	[ln. 3 + ln. 5 + ln. 7]					
11						
12	2016 Scheduled CAP Deliveries - Recharge and Recovery (Acre-Feet "AF")	6,000			375	
13						
14	2016 CAP Rates					
15						
16	M&I Capital Charge	$ 23.00 AF			$ 23.00 AF	
17						
18	M&I Delivery Charge	$ 161.00 AF			$ 161.00 AF	
19						
20	Total [ln. 16 + ln. 18]	$ 184.00			$ 184.00	
21						
22						
23	Purchased CAP Water Expense - Groundwater Storage		$ 1,104,000			$ 69,000
24	[ln. 12 x ln. 20]					
25						
26	Less:					
27						
28	Contractual Payments from Groundwater Savings Facilities ("GSF")	$ (36.00) AF			$ (16.00) AF	
29						
30						
31	Total GSF Credit [ln. 12 x ln. 28]		$ (216,000)			$ (6,000)
32						
33						
34	Net Purchased CAP Water Expense - Recharge and Recovery			$ 888,000		$ 63,000
35	[ln. 23 + ln. 31]					
36						
37						
38	Amortization of Additional Deferred CAP M&I Charges			$ 392,488		$ 36,739
39	[Schedule 2, ln. 48]					
40						
41						
42	Total CAP Water Expense - Recharge and Recovery			$ 1,280,488		$ 99,739
43	[ln. 9 + ln. 34 + ln. 38]					
44						
45	CAP Water Expense in Base Rates			$ (934,941)		$ -
46						
47	2016 CAP Surcharge Revenue			$ 345,547		$ 99,739
48	[ln. 42 - ln. 45]					
49						
50	Thousand Gallons Sold - 2015			4,712,068.4		380,732.7
51						
52	CAP Surcharge Monthly Rate per Thousand Gallons Sold			$ 0.073		$ 0.262
53	[ln. 48 / ln. 50]					
54						
55	Average Residential Usage (thousand gallons)			7.8		11.7
56						
57	Monthly CAP Surcharge (Average Residential Use)			$ 0.57		$ 3.07
58	[ln. 52 X ln. 55]					
59						
60						

ARIZONA WATER COMPANY
CAP Water Surcharge Update
Revenue Requirement Per Acre Foot (AF) of CAP Water
Including Deferred CAP M&I Charges

Line No.		PINAL VALLEY [A]	PINAL VALLEY [B]	PINAL VALLEY [C]	WHITE TANK [D]	WHITE TANK [E]	WHITE TANK [F]	Line No.
1	**Total CAP Allocation**	10,884 AF			968 AF			1
2								2
3	Less:							3
4	Amount of CAP allocation for which previously deferred M&I charges have been reimbursed	2,000 AF			0 AF			4
5	(Desert Basin Power Plant)							5
6								6
7	Amount of CAP allocation deemed used & useful in Dec. 68302, and for which a corresponding	279 AF			0 AF			7
8	portion of deferred CAP M&I charges were included in rate base							8
9								9
10	Amount of CAP allocation deemed used & useful in Dec. 71845, and for which a corresponding	1,003 AF			0 AF			10
11	portion of deferred CAP M&I charges were included in rate base							11
12								12
13	Amount of CAP allocation deemed used & useful in Dec. #####, and for which a corresponding	5,000 AF			0 AF			13
14	portion of deferred CAP M&I charges were included in rate base							14
15								15
16	Amount of CAP allocation related to current balance of deferred M&I charges	2,602 AF			968 AF			16
17	[ln. 1 - ln. 4 - ln. 7 - ln. 10 - ln. 13]							17
18								18
19								19
20	Current balance of deferred CAP M&I charges - 12/31/2015		$ 2,532,315			$ 534,906		20
21								21
22	Balance per AF		$ 973			$ 553		22
23	[ln. 20 / ln. 17]							23
24								24
25	Amount of CAP allocation to be delivered for recharge/recovery in 2016	1,000 AF			375 AF			25
26								26
27	Additional deferred CAP M&I charges to be included in rate base		$ 973,219			$ 207,221		27
28	[ln. 22 x ln. 25]							28
29								29
30	Weighted Average Cost of Equity - Decision No. #####	5.77%			5.77%			30
31	Gross Revenue Conversion Factor - Decision No. #####	1.6585			1.6585			31
32	Pre-Tax Weighted Cost of Equity	9.57%			9.57%			32
33	[Ln. 30 x Ln. 31]							33
34	Weighted Average Cost of Debt - Decision No. #####	3.16%			3.16%			34
35	Pre-Tax Cost of Capital/Required Return on Rate Base	12.73%			12.73%			35
36	[Ln. 32 + Ln. 34]							36
37	Required Revenue/Pre-Tax Return on Rate Base			$ 123,886			$ 26,378	37
38	[Ln. 27 x Ln. 35]							38
39								39
40	Annual amortization of deferred CAP M&I charges to be included in rate base (20Yrs.)			$ 48,661			$ 10,361	40
41	[ln. 27 / 20 years]							41
42								42
43	Total Revenue Requirement 2016 for additional CAP allocation delivered for recharge/recovery			$ 172,547			$ 36,739	43
44	[Ln. 37 + Ln. 40]							44
45								45
46	Amortization of Additional Deferred CAP M&I Capital Charges - Decision No. #####			$ 219,941			$ 0	46
47								47
48	Total Revenue Requirement			$ 392,488			$ 36,739	48
49								49
50								50

ARIZONA WATER COMPANY
Docket No W-1445A-15-0277
CAP Water Surcharge Reconciliation
2015 Revenue and Expense

Line No.		January	February	March	April	May	June	July	August	September	October	November	December	Total
1	**Pinal Valley**													
2														
3	CAP Water Surcharge Revenues	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
4														
5	Annual CAP Water Costs:													
6														
7	CAP Water Capital Charges	$ 0	$ 0	$ 0	$ 0	$ 55,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 55,000	$ 0	$ 110,000
8	CAP Water Delivery Charges	$ 65,417	$ 65,417	$ 65,417	$ 65,417	$ 65,417	$ 65,417	$ 65,417	$ 65,417	$ 65,417	$ 65,417	$ 65,417	$ 65,417	$ 785,004
9	Amortization of Deferred CAP M&I Charges	$ 18,328	$ 18,328	$ 18,328	$ 18,328	$ 18,328	$ 18,328	$ 18,328	$ 18,328	$ 18,328	$ 18,328	$ 18,328	$ 18,328	$ 219,936
10	Contractual Payments from Groundwater Savings Facilities	$ 0	$ 0	$ 0	$ 0	$ (90,000)	$ (90,000)	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ (180,000)
11														
12														
13	Total CAP Water Costs	$ 83,745	$ 83,745	$ 83,745	$ 83,745	$ 48,745	$ (6,255)	$ 83,745	$ 83,745	$ 83,745	$ 83,745	$ 138,745	$ 83,745	$ 934,940
14	[ln. 7 + ln. 8 + ln. 9 + ln. 10]													
15														
16	**White Tank**													
17														
18	CAP Water Surcharge Revenues	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
19														
20	Annual CAP Water Costs:													
21														
22	CAP Water Capital Charges	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
23	CAP Water Delivery Charges	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
24	Amortization of Deferred CAP M&I Charges	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
25	Contractual Payments from Groundwater Savings Facilities	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
26														
27														
28	Total CAP Water Costs	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
29	[ln. 22 + ln. 23 + ln. 24 + ln. 25]													
30														
31														
32														
33														
34														
35														
36														
37														
38														
39														
40														

ARIZONA WATER COMPANY
Docket No. W-1445A-15-0277
CAP Water Surcharge Reconciliation
2015 Water Sales (1,000 gallons)

Exhibit JDH-11
Schedule 4
Page 1 of 1
Witness: Harris

Line No.		January	February	March	April	May	June	July	August	September	October	November	December	Total
1														
2	**Pinal Valley**													
3														
4	Water Sales													
5														
6	Residential	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Commercial													0
8	Industrial													0
9	Other													0
10	Total Water Sales													0
11														
12														
13														
14														
15	**White Tank**													
16														
17	Water Sales													
18														
19	Residential	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Commercial													0
21	Industrial													0
22	Other													0
23	Total Water Sales													0
24														
25														
26														
27														
28														
29														
30														
31														
32														
33														
34														
35														
36														
37														
38														
39														
40														

Supporting Schedules:

Recap Schedules:

ARIZONA WATER COMPANY

WATER RATES - CAP WATER SURCHARGE

Filed by: William M. Garfield
Title: President
Date of Original Filing: August 21, 2015
System(s): **ALL SERVICE AREAS LISTED BELOW**

A.C.C. No.
Cancelling A.C.C. No.
Tariff or Schedule No.
Filed: August 21, 2015
Effective:

RATE:

System	Rate per 1,000 gallons
Pinal Valley (includes Casa Grande, Coolidge, Stanfield)	$0.073
White Tank	$0.262

TERMS AND CONDITIONS: Subject to the Company's Tariff Schedule TC-243.

ADJUSTMENT: Plus the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of the gross revenues of the Company and/or the price or revenue from the water or service sold and/or the volume of water pumped or purchased for sale and/or sold hereunder and any tax or similar assessment based on the withdrawal, delivery or use of water. In the event of any increase or decrease in taxes or other governmental impositions, rates shall be adjusted to reflect such increase or decrease.

TERMS AND CONDITIONS: Subject to the Company's Tariff Schedule TC-243.

ARIZONA WATER COMPANY

Arizona Corporation Commission

Docket No. W-01445A-15-0277

2015

WESTERN GROUP

RATE HEARING

Direct Testimony

of

Joel M. Reiker

EXHIBIT

A-6

admitted 5-12-16

ARIZONA WATER COMPANY

Arizona Corporation Commission

Docket No. W-01445A-15-0277

2015

WESTERN GROUP

RATE HEARING

Direct Testimony

of

Joel M. Reiker

TABLE OF CONTENTS

I. Introduction and Qualifications 3
II. Purpose and Scope of Testimony 4
III. The Concept of a Fair and Reasonable Rate 6
IV. Central Arizona Project ("CAP") M&I Fees 9
V. Summary of Revenue Requirement 13
VI. Rate Base and Rate Base Adjustments 13
A. Rate Base 13
B. Rate Base Adjustments 14
VII. Income Statement 19
A. Test Year Revenues and Revenue-Based Adjustments 19
B. Expense-Based Adjustments 26
VIII. Cost of Service Study and Rate Design 35
IX. Purchased Power Adjuster 47

EXHIBITS

CAP M&I Fee True-up – Pinal Valley JMR-1
CAP M&I Fee True-up – Pinal Valley (Casa Grande) JMR-2
CAP M&I Fee True-up – Pinal Valley (Coolidge) JMR-3
CAP M&I Fee True-up – White Tank JMR-4
How Low Can it Go: Declining Customer Usage – NARUC Water Committee July 2014 ..... JMR-5
Weather & Usage Normalization JMR-6
Tariff AM-253 – Purchased Power Adjustment Mechanism JMR-7

ARIZONA WATER COMPANY

Direct Testimony of

Joel M. Reiker

I. Introduction and Qualifications

Q. PLEASE STATE YOUR NAME, EMPLOYER, AND OCCUPATION.

A. My name is Joel M. Reiker. I am employed by Arizona Water Company (the "Company") as Vice President - Rates and Revenues. In this role, I have overall responsibility for regulatory matters including rate case applications, exhibits, testimony, and tariffs for filing at the Arizona Corporation Commission ("Commission"). I also oversee the development of procedures and controls to ensure organizational compliance. In addition, I perform general executive management responsibilities under the direction of the President and Chief Operating Officer.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. In 1998, I graduated from the Arizona State University School of Management, receiving a Bachelor of Science degree in global business with a specialization in finance. I have attended the National Association of Regulatory Utility Commissioners ("NARUC") and the Institute of Public Utilities' Regulatory Studies program at Michigan State University, and I have completed undergraduate coursework in water resources management and water distribution system operation and maintenance. From 1999 to 2005, I was employed by the Commission as a Staff Rate Analyst in the Utilities Division. During my employment with the Commission, my responsibilities included providing recommendations on behalf of Staff regarding rate of return, mergers and acquisitions, divestitures, financings and affiliated interests issues, and I

occasionally acted as an arbitrator for disputes brought before the Utilities Division.

Subsequent to my employment with the Commission, I was employed by the American Water Works Service Company ("American Water") as a Senior Regulatory Analyst. My responsibilities with American Water included the preparation and support of regulatory filings, including rate cases, on behalf of utility subsidiaries in Arizona, California, New Mexico and Hawaii. In 2007, I joined the Company as Manager of Rates and Regulatory Accounting, and in 2012, I was promoted to the position of Vice President – Rates and Revenues. I am a member of the American Water Works Association ("AWWA") and the Society of Utility and Regulatory Financial Analysts ("SURFA"). I am a SURFA Certified Rate of Return Analyst ("CRRA") and a certified water distribution system operator in Arizona.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE COMMISSION?

A. Yes. I have testified before the Commission numerous times on behalf of Staff and utilities in cases involving rates, mergers and acquisitions, financings, complaints, and the Commission's affiliated interests rules. I have testified in California before the California Public Utilities Commission on issues regarding rate of return, risk and revenue decoupling, and I have filed testimony with the New Mexico Public Regulation Commission addressing marginal cost-based special contracts for large industrial customers.

II. <u>Purpose and Scope of Testimony</u>

Q. WHAT IS THE SCOPE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. I address several issues and specific adjustments in this general rate case application, including the development of rate base, working capital requirement, and net operating income for the Company's Western Group for the historical twelve-month period ending December 31, 2014 ("Test Year"). I also present the calculation of the associated increase in gross revenue requirement, as well as

the Company's fully allocated class cost of service study and proposed rate design for each service area in the Western Group.

Q. DOES YOUR TESTIMONY IN THIS PROCEEDING INCORPORATE THE RECOMMENDATIONS OF OTHER COMPANY WITNESSES?

A. Yes. My testimony in this proceeding incorporates recommendations sponsored in the pre-filed direct testimonies of William M. Garfield, President and Chief Operating Officer; Joseph D. Harris, Vice President and Treasurer; Fredrick K. Schneider, Vice President – Engineering, and Pauline M. Ahern, CRRA.

Q. PLEASE IDENTIFY THE EXHIBITS AND ASSOCIATED SCHEDULES YOU ARE SPONSORING.

A. I sponsor the rate case exhibits and schedules marked A through H accompanying the Company's application in this proceeding. These schedules constitute all of the information required from Class A utilities pursuant to Arizona Administrative Code ("A.A.C.") R14-2-103.B. I also sponsor Exhibits JMR-1 through JMR-7 attached to this pre-filed testimony.

Q. WERE THESE EXHIBITS PREPARED BY YOU OR UNDER YOUR DIRECTION AND SUPERVISION?

A. Yes, they were.

Q. DID THE COMPANY FILE THE ADDITIONAL INFORMATION REQUIRED FOR CLASS A, B AND C UTILITIES PURSUANT TO A.A.C. R14-2-103.B.5?

A. Yes. These additional filing requirements are included as the Appendix to the Company's application in this proceeding.

Q. WHICH OF THE COMPANY'S SERVICE AREAS ARE INCLUDED IN THIS GENERAL RATE CASE APPLICATION?

A. This application includes the Company's Western Group, which includes the Pinal Valley, White Tank, and Ajo service areas.

The Pinal Valley service area was formed as a result of consolidating the Casa Grande, Coolidge, and Stanfield water systems. Decision 71845 (August

24, 2010) approved the phased consolidation of these systems, under which the accounting records for Casa Grande, Coolidge, and Stanfield were fully consolidated into Pinal Valley and the fixed basic service charges of all three systems were consolidated into a single rate. The Stanfield system retained separate quantity rates. Subsequent to Decision 71845, the Company filed a 2010 test year rate case for its Western Group (Docket No. W-01445A-10-0517), which resulted in a settlement agreement approved by the Commission in Decision 73144 (May 1, 2012). Decision 73144 approved the full consolidation of the Pinal Valley service area. Accordingly, the Pinal Valley service area now operates under a single general service tariff with fully consolidated accounting and billing records.

III. <u>The Concept of a Fair and Reasonable Rate</u>

Q. WHAT IS A FAIR AND REASONABLE RATE?

A. In the context of public utility regulation, a fair and reasonable rate, in the aggregate, is one that provides the utility an opportunity to recover no less, and no more, than its cost of providing service, including the cost of capital deployed in the provision of such service, to the public. The authoritative text on utility ratemaking by professors Bonbright, Danielsen and Kamerschen provides the following statement on cost of service as the standard of reasonableness:

> No writer whose views on public utility rates command respect purports to find a single yardstick by sole reference to which rates may be judged reasonable or socially desirable as distinguished from rates that are unreasonable or adverse to the public interest. A complex of tests of acceptability is required just as would be the case with the tests of a good automobile, a good income-tax law, or a good poem. Nevertheless, one standard of reasonable rates can fairly be said to outrank all others in the importance attached to it by experts and public opinion alike – the standard of costs of service, often qualified by the stipulation that the relevant cost is necessary,

true (i.e., private and social) cost or cost reasonably or prudently incurred.[1]

As I discuss in Section VIII, below, a specific rate charged to an individual customer may not be equal to the cost of providing service to that specific customer. Such an *individual* rate can still be considered fair and reasonable, provided that some overriding benefit or goal is realized, and provided that the *overall* rate level (i.e. the aggregate rate), on average over the long-term, equals the cost of service.

Q. ARE UTILITIES THAT CHARGE LESS THAN A FAIR AND REASONABLE RATE STILL OBLIGATED TO PROVIDE SERVICE TO THE PUBLIC?

A. Yes. Public utilities have an obligation to serve all customers in their service territory who desire such service, regardless of whether or not the rates charged fully recover the cost of service. However, it is also the duty of a regulated utility to act in the long-term best interest of its customers by seeking appropriate rate relief when its rates do not adequately recover the reasonable cost of providing service. As mentioned above, such rate relief requires the regulator to determine the utility's cost of service and set new rates equal to that cost of service. This arrangement is known as the "regulatory compact." The regulatory compact states that in return for being granted the exclusive right to provide utility service to the certificated area, the regulated utility assumes an obligation to serve, with fair and reasonable compensation for such service being equal to the costs incurred.

Q. IS A UTILITY ACTING IN THE LONG-TERM BEST INTEREST OF ITS CUSTOMERS IF IT SEEKS RATE RELIEF?

A. Yes. A utility whose rates are less than its total cost of service still incurs that cost of service. Put another way, if the parties benefiting from a particular

[1] Bonbright, James C., Albert L. Danielsen and David R. Kamerschen. Principles of Public Utility Rates. Public Utilities Reports, Inc. 1988. p. 109.

service are not paying for that service, somebody else must pick up the tab. In the case of a regulated public utility, it is the owners of that utility who pay those costs, or "pick up the tab." This situation sometimes occurs in the short-term, as one might expect actual revenues to fluctuate around actual costs in any given year. However, over the *long-term*, those fluctuations should cancel each other out such that, on *average*, rates are equal to cost. If rates are consistently lower than cost, the owners of the utility are forced to subsidize the cost of service, which is not sustainable in the long-term. That situation, aside from encouraging inefficient and excessive water consumption in the near-term, has the undesirable effect of unnecessarily increasing costs in the future.

Q. HOW DOES THAT HAPPEN?

A. The utility's owners provide the capital necessary to build, improve, repair and replace the infrastructure required to provide safe and reliable water service. It is important to distinguish this capital, which represents an investment on the part of owners, from the costs associated with running the utility which, as mentioned above, include costs associated with deploying said capital (i.e. the rate of return). Each dollar of these non-capital operating costs that the owners of the utility are required to pay represents one less dollar that would otherwise be available to build, improve, repair and replace infrastructure. Over time, subsidizing the cost of service creates financial pressure to reduce or delay improvements, operate the utility in a weakened financial condition or, in some cases, divert shareholder capital to other enterprises. Because water utilities operate in a rising cost industry,[2] when utility plant improvements are eventually made, they come at an even higher cost. Additionally, operating the utility in a

[2] See Chestnutt. "Conservation Rates in the Real World." Journal AWWA. Feb. 1998. p. 64., Consolidated Water Rates: Issues and Practices in Single-Tariff Pricing. U.S. Environmental Protection Agency and the NARUC. Sept. 1999. p. 31., and chart of T&D Maintenance Cost per Customer – 1966 to 2011 in Section VI.

weakened financial condition increases the future cost associated with the capital needed to make those improvements.

Q. HOW IS THE FOREGOING DISCUSSION RELEVANT TO THE COMPANY'S REQUEST FOR RATE RELIEF IN THIS PROCEEDING?

A. Given the regulatory compact mentioned above, any question concerning the appropriate rate to be charged as a result of this proceeding can only be answered by accurately determining the Company's cost of service. In this proceeding, Company witness Mr. Garfield discusses, among other things, the public policy supporting the critical need to deliver renewable water supplies to our customers, Mr. Harris addresses the need to recover costs on a more timely basis through the use of surcharges and off-site facilities fees, Mr. Schneider addresses the Company's capital investment needs in detail, and Ms. Ahern addresses the cost of the capital deployed by the Company's owners for the purpose of providing water utility service. In this testimony, I present, and provide evidentiary support for, the revenue required to improve and maintain the Company's financial condition, thereby allowing for the cost-effective delivery of renewable water supplies and replacement of infrastructure. That revenue requirement is no less, and no more, than the Company's cost of service.

IV. Central Arizona Project ("CAP") M&I Fees

Q. WHAT ARE CAP M&I FEES?

A. The Commission approved the CAP M&I fees[3] in Decision 68302 (November 14, 2005) for the Company's Pinal Valley[4] and White Tank service areas for the purpose of recovering ongoing and deferred CAP Municipal and Industrial ("M&I") subcontract capital charges. As a condition of approval, the Commission required the Company to submit a CAP water use plan outlining how the Company plans to use its CAP water allocation for the benefit of its customers in

[3] The CAP M&I fee was originally named the "CAP Hook-Up Fee." The name was changed to "CAP M&I fee in Decision No. 73144.

[4] Separate fees were approved for the Casa Grande and Coolidge water systems.

these service areas. The Company filed its original CAP water use plan on December 29, 2006, and on August 7, 2015, the Company filed in this docket an update to that CAP water use plan for the Pinal Valley and White Tank service areas (collectively referred to as the "2015 CAP Use Plans"). Messrs. Garfield, Schneider and Harris each address different aspects of the Company's 2015 CAP Use Plans in more detail in their pre-filed direct testimonies. Later in this testimony, I also address the 2015 CAP Use Plans, and the Company's proposed regulatory treatment of CAP related costs.

Q. HAS THE COMMISSION REVIEWED THE CAP M&I FEES, INCLUDING THE BALANCE OF DEFERRED CAP M&I CAPITAL CHARGES, SINCE ORIGINALLY APPROVING THE FEES IN DECISION NO. 68302?

A. Yes. The Commission reviewed the fees in each of the two rate cases the Company filed for its Western Group since Decision 68302. In Decision 71845, the Commission concluded that:

> It is reasonable and in the public interest to allow the CAP [M&I] Fee Tariff Schedule for the Company's Casa Grande, Coolidge and White Tank systems to continue until [the Company's] next Western Group rate case...[5]

In the settlement agreement approved in Decision 73144 in the subsequent Western Group general rate case, the Company, Staff and the Residential Utility Consumer Office ("RUCO") agreed that the "CAP [hook-up fees] for the Casa Grande, Coolidge, and White Tank systems should be continued, without change, except that the name of the CAP [hook-up fees] should be changed to CAP M&I Fees to more accurately describe the fees..."[6]

Q. IS THE COMPANY PROVIDING ANOTHER TRUE-UP OF THE CAP M&I FEES FOR COMMISSION REVIEW IN THIS PROCEEDING?

---

[5] Decision No. 71845, dated August 24, 2010. Conclusion of Law No. 22.
[6] Decision No. 73144, dated May 1, 2012. Finding of Fact No. 120.

A. Yes. Consistent with prior rate cases and as approved by the Commission, the Company has prepared true-ups of each of the CAP M&I fees in effect in the Western Group, and these true-ups are attached to this testimony as Exhibits JMR-1 through JMR-4. Page 2, column G, line 12 of the respective exhibits shows the balance of deferred CAP M&I capital charges as of December 31, 2014. As of that date, the recorded balance of deferred CAP M&I capital charges was $6,687,970 in the Pinal Valley service area[7] and $480,815 in the White Tank service area. The December 31, 2014, pro forma balance in the Pinal Valley service area, shown in column H of Exhibit JMR-1, is $2,289,147. The following table summarizes the December 2014, recorded balance, pro forma balance, and corresponding projected balance per Decision 68302 for each service area:

Western Group – Deferred CAP M&I Capital Charges

	Pinal Valley		White Tank
	Actual	Pro Forma	Actual
Dec. 2014 – Recorded	$6,687,970	$2,289,147	$480,815
Projected Dec. 2014 per Decision 68302	$3,583,283	$3,583,283	$340,276

Q. PLEASE EXPLAIN THE $2,289,147 PRO FORMA BALANCE OF DEFERRED CAP M&I CAPITAL CHARGES IN PINAL VALLEY.

A. The $2,289,147 pro forma balance represents the actual December 31, 2014, balance of deferred charges, less $4,398,823 in deferred charges that the Company proposes to include in rate base in this proceeding. The $4,398,823 the Company proposes to include in rate base is the pro rata portion of deferred CAP M&I capital charges related to the amount of the Company's previously unused CAP water allocation that is being delivered to general service customers in the Pinal Valley service area in 2015. The Company's proposed treatment is consistent with prior Commission practice regarding deferred CAP M&I capital

[7] $4,697,617 in Casa Grande and $1,990,353 in Coolidge.

charges that become used and useful as a utility puts its CAP water allocation to beneficial use.[8] I discuss this rate base adjustment in further detail in Section VI of this testimony.

Q. DOES THE COMPANY PLAN TO DELIVER CAP WATER TO GENERAL SERVICE CUSTOMERS IN THE WHITE TANK SERVICE AREA?

A. Yes. As outlined in the 2015 CAP Use Plans, the Company plans to deliver a portion of its White Tank CAP water allocation to general service customers beginning in 2016. Consistent with its plan for the Pinal Valley service area, the Company will accomplish this through the cost effective method of groundwater recharge and recovery. Messrs. Garfield, Schneider and Harris each address the Company's 2015 CAP Use Plans as it relates to the White Tank service area in more detail in their pre-filed direct testimonies.

Q. IS THE COMPANY REQUESTING COMMISSION AUTHORITY TO CONTINUE COLLECTING THE CAP M&I FEES IN THE PINAL VALLEY AND WHITE TANK SERVICE AREAS?

A. Yes. Although a significant portion of the December 2014 balance of deferred charges in Pinal Valley is now eligible for recovery in rates based on prior Commission practice, the Company will continue to defer, with interest, the CAP M&I capital charges related to the unused portion of the Company's total CAP water allocation. Assuming the Commission approves the Company's proposed regulatory treatment of CAP related costs in this proceeding (discussed later in this testimony and in the pre-filed testimony of other Company witnesses), the Company plans to steadily increase the delivery of CAP water to customers in the Pinal Valley and White Tank service areas each year until its full allocation is put to beneficial use. Therefore, it is appropriate to continue collecting the CAP

[8] *See* Decision No. 61831, dated July 20, 1999 (Paradise Valley Water Company), Decision No. 62293, dated February 1, 2000 (Sun City Water Company & Sun City West Utilities Company), Decision No. 66849, March 19, 2004 (Arizona Water Company), Decision No. 68302, dated Nov. 14, 2005 (Arizona Water Company), Decision No. 71845, dated Aug. 24, 2010 (Arizona Water Company)

M&I Fees to recover a portion of the cost of securing renewable supplies for future customers, and to alleviate the impact on current customers of using such supplies.

V. Summary of Revenue Requirement

Q. PLEASE EXPLAIN SCHEDULE A-1.

A. Schedule A-1 to the Company's application is titled "Computation of Increase in Gross Revenue Requirement." The increase in gross revenues for each system in the Western Group represents the change in gross revenues that the Company has determined is necessary to recover the cost of providing safe, reliable and adequate service to its customers. Page 1 of Schedule A-1 includes a summary for the Western Group. As shown on line 23 of page 1, the total required increase in gross revenues for the Western Group based on the historical Test Year ending December 31, 2014, is $6,010,408, or 28.33% over current base rates.

VI. Rate Base and Rate Base Adjustments

A. Rate Base

Q. HOW DID YOU ARRIVE AT THE TEST YEAR ORIGINAL COST RATE BASE SHOWN ON SCHEDULE B-1, LINE 23?

A. The original cost rate base was calculated by establishing the balance of utility plant in service at the end of the Test Year, per the Company's books, as shown in column A, lines 3–9 of Schedule B-2. Typical rate base deductions (accumulated depreciation, advances for construction, etc.) and additions (working capital, etc.) were then calculated to arrive at the actual end-of-Test Year rate base shown in column A, line 30 of Schedule B-2. Finally, the Company made various pro forma adjustments (columns B through J of Schedule B-2) to the actual end-of-Test Year rate base to arrive at the adjusted end-of-Test Year rate base shown in column L of Schedule B-2. As shown in column L, line 30 of Schedule B-2, and summarized on Schedule B-1, the

Western Group's total adjusted end-of-Test Year rate base is $67,417,785. The Company accepts original cost as being equal to fair value for purposes of this proceeding.

Q. HOW DID YOU ESTIMATE THE WORKING CASH COMPONENT OF WORKING CAPITAL SHOWN ON SCHEDULE B-5, LINE 3?

A. The working cash component of required working capital was estimated using the "lead/lag study" methodology. A lead/lag study examines the net lag days between: (1) the time lag between services rendered and the receipt of revenues for such services and (2) the time lag between recording costs and the payment of such costs. The lead/lag study submitted by the Company in its 2007 Test Year total-Company rate case (Docket No. W01445A-08-0440) was used as a starting point to estimate the working cash requirement in this case.

Q. PLEASE RECONCILE THE REMAINING WORKING CAPITAL COMPONENTS LISTED ON LINES 5–9 OF SCHEDULE B-5 WITH THE COMPANY'S COMPARATIVE BALANCE SHEET SHOWN ON SCHEDULE E-1.

A. The amount of materials and supplies inventories, required bank balances and prepayments included in the required working capital allowance shown on Schedule B-5 represents a 13-month average, whereas the balance sheet shown on Schedule E-1 represents a single point in time. A 13-month average balance of the aforementioned working capital components eliminates daily fluctuations and more accurately reflects ongoing balances.

B. <u>Rate Base Adjustments</u>

Q. PLEASE EXPLAIN RATE BASE ADJUSTMENT RB-1 – ADJUST RATE BASE TO INCLUDE POST-TEST YEAR PLANT.

A. Rate base adjustment RB-1, detailed on pages 1–8 of the Appendix to Schedule B-2, increases the end-of-Test Year balance of utility plant and accumulated depreciation to reflect revenue-neutral utility plant additions placed into service

after the end of the Test Year. Revenue-neutral utility plant includes only those items required for the provision of service to customers served during the Test Year. Mr. Schneider discusses each of the Company's proposed post-Test Year plant projects, and provides detailed supporting documentation for each project, in his pre-filed direct testimony.

Rate base adjustment RB-1 increases the Western Group's net utility plant in service by $9,496,795, and increases the Phoenix office and meter shop's total net plant in service by $198,336. This adjustment assumes that these items were placed in service as of December 31, 2014, and assumes for ratemaking purposes that the Company recorded one half-year of depreciation on these additions, consistent with standard utility plant depreciation practices.

Q. PLEASE EXPLAIN RATE BASE ADJUSTMENT RB-2 – AMORTIZE DEFERRED REGULATORY ASSETS APPROVED IN PRIOR RATE CASES.

A. Rate base adjustment RB-2, detailed on page 9 of the Appendix to Schedule B-2, is the adjustment necessary to amortize regulatory assets approved for the Pinal Valley service area (Casa Grande system) in Decisions 68302 and 71845. Rate base adjustment RB-2 amortizes these items through the end of the Test Year, resulting in a net regulatory asset of $354,981 in Pinal Valley. These regulatory assets, which are currently included in rate base, represent previously deferred CAP M&I capital charges that the Commission found used and useful in prior rate proceedings.

Q. WHY DID THE COMMISSION FIND THESE DEFERRED CAP M&I CAPITAL CHARGES USED AND USEFUL?

A. In its 2003 test year Western Group rate case (Docket No. W-01445A-04-0650), the Company provided evidence showing that it delivered 279 acre-feet ("AF") of its total Casa Grande CAP water allocation of 8,884 AF to non potable customers who were not contractually obligated to reimburse the Company for a portion of deferred CAP M&I capital charges. Accordingly, the Company proposed to

include $142,896, a pro rata portion of the test year-ending balance of deferred CAP M&I capital charges, in rate base.[9] No party to that proceeding disputed the fact that this amount was used and useful and as a result, the Commission included the $142,896 in rate base to be amortized to expense over a period of 20 years.[10] As of December 31, 2014, the net balance of this regulatory asset was $64,303.

In its 2007 test year rate case (Docket No. W-01445A-08-0440), the Company provided additional evidence showing that it delivered 1,003 AF of its total Casa Grande CAP water allocation of 8,884 AF to non potable customers who were not contractually obligated to reimburse the Company for a portion of deferred CAP M&I capital charges. Accordingly, the Company proposed to include $447,197, a pro rata portion of the test year-ending balance of deferred CAP M&I capital charges, in rate base.[11] No party to that proceeding disputed the fact that this amount was used and useful and as a result, the Commission included the $447,197 in rate base to be amortized to expense over a period of 20 years.[12] As of December 31, 2014, the net balance of this regulatory asset was $354,981.

Q. IS THE COMPANY PROPOSING TO INCLUDE ADDITIONAL USED AND USEFUL DEFERRED CAP M&I CAPITAL CHARGES IN RATE BASE IN THIS PROCEEDING?

A. Yes. The Company's proposal is reflected in the following rate base adjustment, RB-3.

Q. PLEASE EXPLAIN RATE BASE ADJUSTMENT RB-3 – ADJUST DEFERRED REGULATORY ASSETS TO REFLECT ADDITIONAL USED AND USEFUL DEFERRED CAP M&I CAPITAL CHARGES.

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[9] *See* Exhibit JMR-2 to this pre-filed testimony, p. 3, footnote 1 for the original calculation of the $142,896.
[10] *See* Decision No. 68302 (Nov. 14, 2005), p. 6 at 7 – 26, p. 7 at 1 – 4 & p. 18 at 4 – 24.
[11] *See* Exhibit JMR-2 to this pre-filed testimony, p. 3, footnote 2 for the original calculation of the $447,196.
[12] *See* The direct testimony and exhibits of Staff witness Bozzo and RUCO witness Coley in Docket No. W-01445A-08-0440.

A. Rate base adjustment RB-3, detailed on page 10 of the Appendix to Schedule B-2, increases the regulatory asset discussed above to reflect additional deferred CAP M&I capital charges of $4,398,823 now used and useful in the Pinal Valley service area. As explained in the Company's 2015 CAP Use Plans filed in this docket on August 7, 2015, and in the pre-filed direct testimonies of Messrs. Garfield, Schneider and Harris, in 2015 the Company is delivering 5,000 AF of CAP water to general service customers in the Pinal Valley service area, in addition to ongoing CAP water sales to non potable customers. To accomplish this, the Company is storing 2,500 AF of CAP water at the Maricopa-Stanfield Irrigation and Drainage District's groundwater savings facility, and 2,500 AF of CAP water at the Central Arizona Irrigation and Drainage District's groundwater savings facility. The Company is recovering this stored CAP water from its 39 Arizona Department of Water Resources ("ADWR")-permitted recovery wells and delivering it to general service customers throughout the Pinal Valley service area.

Q. WHAT PERCENTAGE OF THE COMPANY'S PREVIOUSLY UNUSED CAP WATER ALLOCATION IN THE PINAL VALLEY SERVICE AREA DOES THE 5,000 AF BEING DELIVERED TO GENERAL SERVICE CUSTOMERS IN 2015 REPRESENT?

A. As shown in the following table, the 5,000 AF of CAP water the Company is delivering to general service customers in the Pinal Valley service area in 2015 represents 65.7% of the service area's previously unused CAP water allocation:

Pinal Valley – CAP Water Allocation Currently Used & Useful

1.	Casa Grande CAP water allocation	8,884 AF
2.	Coolidge CAP water allocation	2,000 AF
3.	Total Pinal Valley CAP water allocation	10,884 AF
4.	Amount of CAP allocation for which previously deferred M&I charges have been reimbursed (SRP Desert Basin Power Plant)	2,000 AF
5.	Amount of CAP allocation found used and useful in Dec. 68302	279 AF
6.	Amount of CAP allocation found used and useful in Dec. 71845	1,003 AF
7.	Previously unused portion of allocation [Ln. 3 – Ln. 4 – Ln. 5 – Ln. 6]	7,602 AF
8.	Amount of CAP allocation delivered to general service customers in 2015	5,000 AF
9.	Current general service deliveries as % of previously unused allocation [Ln. 8 ÷ Ln. 7]	65.7%
10.	Remaining allocation [Ln. 7 – Ln. 8]	2,602 AF

Q. HOW DID THE COMPANY ARRIVE AT THE TOTAL ADJUSTMENT OF $4,398,823 REFLECTED IN RATE BASE ADJUSTMENT RB-3?

A. As mentioned in Section IV, above, the December 31, 2014, balance of deferred CAP M&I capital charges was $6,687,970. This balance represents the CAP M&I capital charges related to the unused portion of the Pinal Valley service area's CAP water allocation as of December 31, 2014. Based on the preceding calculation, approximately 65.7%, or $4,398,823 of this balance, is currently used and useful and should be included in the Pinal Valley service area's rate base in this proceeding.

Q. OVER HOW MANY YEARS DOES THE COMPANY PROPOSE TO AMORTIZE THIS REGULATORY ASSET?

A. Consistent with prior Commission practice, the Company proposes to amortize this regulatory asset over a period of 20 years.[13]

Q. HOW DOES THE COMPANY PROPOSE TO RECOVER THE COST OF ADDITIONAL DEFERRED CAP M&I CAPITAL CHARGES BECOMING USED AND USEFUL BEFORE THE NEXT WESTERN GROUP RATE CASE?

[13] *See* Decision No. 68302 (Nov. 14, 2005), p. 6 at 7 – 26 & p. 7 at 1 – 4.

A. The Company plans to steadily increase delivery of CAP water to its general service customers until the Company is using its full CAP allocation in the Western Group. As a result, an increasing percentage of the Company's deferred CAP M&I capital charges in both the Pinal Valley and White Tank service areas will become used and useful, even before the Commission issues a final order in this proceeding. Therefore, the Company requests Commission approval of a CAP surcharge, in part to recover these prudently incurred costs on a timely basis. Mr. Harris describes the Company's proposed CAP surcharge in detail in Section VI of his pre-filed testimony.

Q. PLEASE EXPLAIN RATE BASE ADJUSTMENT RB-4 – ALLOCATE PHOENIX OFFICE AND METER SHOP RATE BASE.

A. Rate base adjustment RB-4, detailed on page 11 of the Appendix to Schedule B-2, is the adjustment necessary to allocate rate base items related to the Phoenix office and meter shop to each system, consistent with the Commission's previously approved allocation methods. Phoenix office and meter shop net rate base is allocated using a three-factor formula. The three-factor formula is based on the ratios of each service area's number of customers, gross plant less intangibles, and payroll to total-company customers, gross plant less intangibles, and payroll.

VII. Income Statement

A. Test Year Revenues and Revenue-Based Adjustments

Q. DID YOU VERIFY AND PROVE THE TEST YEAR REVENUES?

A. Yes. Schedule H-5 shows the Company's bill count. The bill count lists the number of bills by thousand-gallon block and the cumulative consumption by rate block for each rate schedule. The bill count was prepared using the methodology described in Appendix C of the AWWA's Manual of Water Supply Practices M1 (2000), and it is presented in a format consistent with A.A.C. R14-2-103 (Appendix), as well as the Company's prior rate case filings.

As shown on page 2 of Schedule H-2, column E, line 8, the Western Group's total billed water revenues during the Test Year were $20,706,991, compared to total adjusted general ledger ("GL") water revenues of $20,706,922 shown on page 2 of Schedule H-2, column K, line 8. The unreconciled difference of $69 ($20,706,991 - $20,706,922) represents 0.00% of adjusted GL water revenues. Revenues for each of the Western Group service areas are reconciled to within ±0.01% of adjusted GL water revenues on the remaining pages of Schedule H-2.[14]

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-1 – REMOVE SALES TAXES FROM REVENUES AND EXPENSES.

A. Income statement adjustment IS-1, detailed on page 1 of the Appendix to Schedule C-2, is a pro forma adjustment to remove revenue-based taxes from operating revenues and expenses. The purpose of the adjustment is to segregate revenues billed pursuant to the Company's tariffs, which exclude sales taxes and regulatory assessments, from total operating revenues, which include sales taxes and regulatory assessments. Because the Company's tariff rate for coin machine service includes sales tax, sales taxes on coin machine revenues were not removed. Income statement adjustment IS-1 reduces revenues and expenses by $2,273,202 in the Western Group, and has no effect on the Company's adjusted Test Year operating income.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-2 – ELIMINATE NET UNBILLED REVENUES.

A. Income statement adjustment IS-2, detailed on page 2 of the Appendix to Schedule C-2, removes the effect of the year-end accounting requirement to accrue revenues earned but not yet billed. In December of each year, the revenues earned but not yet billed to customers are quantified and recorded as a

[14] A correlation of bill count revenue to actual billed revenue of three percent or less generally indicates that the bill tabulation is sufficiently accurate for rate-design purposes. See AWWA M1 Manual, p. 315.

year-end accounting adjustment. In January of each year, the unbilled revenue accounting adjustment recorded in December is reversed. The net effect of the December and January accounting adjustments are removed from the adjusted operating income by including this pro forma adjustment. This adjustment reduces Test Year revenues by $101,196.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-3 – REMOVE MONITORING ASSISTANCE PROGRAM ("MAP") REVENUES AND EXPENSES.

A. Income statement adjustment IS-3, detailed on page 3 of the Appendix to Schedule C-2, removes the surcharge revenues and Test Year expenses associated with the Arizona Department of Environmental Quality's ("ADEQ") MAP. The MAP initially provided the required testing for three categories of constituents: inorganic, synthetic organic, and volatile organic chemicals. In addition to these constituents, the program now includes testing for asbestos, radionuclides, nitrite and nitrate.

For each system that is required to participate in the MAP, the Company must pay an annual fee to ADEQ based on a formula in that agency's regulations covering the normal testing requirements. Pursuant to the Company's MAP Surcharge Tariff, MA-262, a filing is made with the Director of the Utilities Division in October of each year to establish the surcharge to be effective beginning the following January. The MAP surcharge revenues of $7,569 collected in 2014 and the MAP expenses of $7,887, recorded in 2014 for the Western Group, should be removed from Test Year revenues and expenses to determine new base rates in this proceeding.

Q. WHAT ARE THE ADVANTAGES OF RETAINING THIS METHOD OF DEALING WITH MAP COSTS?

A. There are several benefits to retaining the procedure as currently designed. First, because the testing costs are outside the control of the Company and set

by another state agency independent of the Commission, it is beneficial and more accurate to inform customers on their bills that participation in MAP testing is required by ADEQ and not the Commission. Additionally, the MAP surcharge procedure provides a direct benefit to customers when MAP program cost reductions realized in the past are passed on to customers by way of a reduced MAP surcharge, or a water system's requirement to participate in the MAP is eliminated altogether as a result of customer growth.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-4 – REMOVE NON-POTABLE CAP/NP-274 TARIFF REVENUES & EXPENSES.

A. Income statement adjustment IS-4, detailed on page 4 of the Appendix to Schedule C-2, removes the Test Year revenues and purchased water expenses related to the sale of non-potable CAP water pursuant to the Company's tariff schedule NP-274 ("Non-Potable CAP Tariff"). With the exception of a monthly fixed administrative charge of $50, the Non-Potable CAP Tariff is a "pass-through" tariff. This means that the M&I capital and delivery charges the Company incurs for untreated CAP water sold pursuant to the tariff are passed through to the customer. However, because there can be significant timing differences between the Company's payment of CAP M&I capital and delivery charges and the recovery of those costs from Non-Potable CAP Tariff customers, revenues will not be equal to expenses in a given calendar year. Therefore, it is necessary to remove the Non-Potable CAP Tariff revenues and expenses from the adjusted test year operating income to determine new base rates in this proceeding. This adjustment reduces revenues and expenses in the Western Group by $522,915 and $478,530, respectively.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-5 – ADJUST REVENUES TO REFLECT COIN MACHINE SALES & RECLASSIFICATIONS.

A. Income statement adjustment IS-5, detailed on page 5 of the Appendix to Schedule C-2, is a "housekeeping" adjustment designed to adjust booked

revenues to reflect the actual amount of water dispensed from the Company's coin operated water "salesman" machines, and the reclassification of miscellaneous revenues. Income statement adjustment IS-5 reduces revenues by $614 in the Western Group.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-6 – ANNUALIZE REVENUES AND EXPENSES TO REFLECT END OF TEST YEAR CUSTOMERS.

A. Income statement adjustment IS-6, detailed on pages 6–8 of the Appendix to Schedule C-2, is the adjustment necessary to match revenues and expenses with an end of Test Year rate base. This is accomplished by adjusting revenues and expenses to reflect the number of customers served by the Company on the last day of the Test Year, December 31, 2014. The adjustment to revenues of $63,946 in the Western Group is the difference between the revenues generated by the Test Year 2014 bill count, shown on Schedule H-5, and the revenues generated by a pro forma bill count reflecting the number of customers actually served on December 31, 2014.

The additional $18,642 in expenses for source of supply, pumping, and water treatment were calculated by multiplying (1) the difference between (i) the number of gallons sold per the Test Year bill count, and (ii) the number of gallons sold per a bill count reflecting the number of customers served on December 31, 2014, by (2) the average costs shown on lines 30–32 of Schedule E-7.

The additional $18,987 in transmission and distribution, customer accounting, and administrative and general expenses were calculated by multiplying (1) the difference between (i) the number of customers reflected in the Test Year bill count and, (ii) a pro forma bill count reflecting the number of customers served on December 31, 2014, by (2) the average costs shown on lines 35–37 of Schedule E-7.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-7 – NORMALIZE REVENUES AND EXPENSES TO REFLECT TYPICAL WEATHER AND USAGE.

A. Income statement adjustment IS-7, detailed on pages 9 – 11 of the Appendix to Schedule C-2, is the adjustment to revenues and expenses necessary to reflect residential customer sales under normal weather conditions and usage patterns. The Company normalized residential sales by conducting a multiple regression analysis of monthly residential usage per customer and weather conditions for the five years ending December 2014, using the exponential trend model.[15] This is the same methodology the Company used to normalize per customer usage in its recent 2011 test year Northern Group rate case (Docket No. W-01445A-12-0348). In that proceeding, the Commission stated the following regarding the Company's analysis:

> [The Company] has provided evidence that declining usage is occurring in the Northern Group and in the country as a whole, as Staff has testified that declining usage is occurring and is likely to continue. *This evidence is credible.*[16] (emphasis added)

In addition, the Company's methodology was formally presented to the NARUC Water Committee in the presentation titled "How Low Can it Go – Declining Customer Usage," at NARUC's 2014 Summer Committee Meetings. A copy of that presentation is attached to this testimony as Exhibit JMR-5.

The results of the Company's current analysis, which are shown in Exhibit JMR-6, show that weather conditions in the Pinal Valley and White Tank service areas during 2014 were slightly wetter and cooler than normal, causing Test Year residential usage to be lower than under normal weather conditions. As shown on page 1, line 12, columns A and D of Exhibit JMR-6, under normalized weather

[15] The exponential trend model is a linear trend regression model with a base-10 logarithm applied to the dependent variable.
[16] *See* Decision 74081, p. 64 at 15-17.

conditions, adjusted Test Year residential per customer usage is 0.59% and 1.84% higher than recorded Test Year usage in the Pinal Valley and White Tank service areas, respectively. The Company's analysis also shows that weather conditions in the Ajo service area during 2014 were drier and hotter than normal, causing Test Year residential usage to be higher than under normal weather conditions. As shown on page 1, line 12, column G of Exhibit JMR-6, under normalized weather conditions, adjusted Test Year residential per customer usage is 0.49% lower than recorded Test Year usage in the Ajo service area.

Q. IN ADDITION TO THE EFFECT OF WEATHER CONDITIONS ON CUSTOMER USAGE DISCUSSED ABOVE, DOES THE COMPANY'S ANALYSIS SHOW A PERSISTENT DECLINE IN RESIDENTIAL CUSTOMER USAGE UNRELATED TO WEATHER?

A. Yes, the Company's analysis shows a statistically significant annual decline in residential usage while controlling for weather conditions of 2.64%, 5.30% and 4.95% in the Pinal Valley, White Tank and Ajo systems, respectively. These annual declines, reported on page 1, line 18, columns B, E and H of Exhibit JMR-6, are consistent with the findings of previous studies of declining usage conducted by the Company, as well as published research on the issue of declining usage. I discuss declining usage in more detail in Section VIII of my testimony, below.

Q. HOW DID YOU USE THE RESULTS OF THE COMPANY'S MULTIPLE REGRESSION ANALYSIS TO NORMALIZE REVENUES AND EXPENSES TO REFLECT TYPICAL WEATHER AND USAGE?

A. The Company adjusted residential revenues to reflect 2.05%, 3.46% and 5.44% reductions in the number of gallons sold to residential customers in the Pinal Valley, White Tank and Ajo service areas, respectively. These percentage reductions represent the normalization of sales associated with weather and declining usage, as shown on page 1, line 21, columns C, F and I of

Exhibit JMR-6.[17] Corresponding adjustments to reflect these reductions were also made to source of supply, pumping and water treatment expenses. Income statement adjustment IS-7 reduces operating revenues and expenses in the Western Group by $165,792 and $80,566, respectively.

B. <u>Expense-Based Adjustments</u>

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-8 – ANNUALIZE PAYROLL & RELATED EXPENSE.

A. Income statement adjustment IS-8, detailed on pages 12 - 15 of the Appendix to Schedule C-2, increases payroll and related expenses (i.e. payroll taxes and Company-funded 401(k)) to reflect known and measurable changes to the Company's payroll expense, including the effect of hiring additional employees after the end of the test year. Income statement adjustment IS-8 increases payroll and related expenses in the Western Group by $594,622.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-9 – ADJUST INSURANCE EXPENSE.

A. Income statement adjustment IS-9, detailed on page 16 of the Appendix to Schedule C-2, adjusts medical, vision, dental, long-term disability, life, workers' compensation, and property and liability insurance expenses to reflect increases in the associated premiums. Income statement adjustment IS-9 increases operating expenses in the Western Group by $242,527.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-10 – ADJUST ADMINISTRATIVE & GENERAL ("A&G") EXPENSE TO INCLUDE CUSTOMER DEPOSIT INTEREST EXPENSE.

A. Income statement adjustment IS-10, detailed on page 17 of the Appendix to Schedule C-2, is the pro forma adjustment necessary to recover interest expense related to customer deposits, as required by A.A.C. R14-2-403.B.3. Because

[17] Pinal Valley: 0.59% - 2.64% = 2.05%. White Tank: 1.84% - 5.30% = 3.46%. Ajo: -0.49% - 4.95% = 5.44%.

customer deposits are deducted from rate base, the interest expense related to such deposits will go unrecovered absent an adjustment to include this component of the cost of service as an operating expense. This adjustment increases operating expenses by $27,974 in the Western Group.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-11 – AMORTIZE CAP ACCOUNTING DEFERRAL.

A. Income statement adjustment IS-11, detailed on page 18 of the Appendix to Schedule C-2, is the pro forma adjustment necessary to recover the net cost of delivering CAP water to general service customers in 2015. On July 31, 2015, the Company requested in this docket Commission authority to defer these costs for recovery in this rate case. The total cost of delivering CAP water to general service customers in 2015 is $715,000. However, half of that cost, $357,500, was funded by a Water Management Assistance Program grant the Company received from ADWR, resulting in a reduced net CAP accounting deferral of $357,500.

Q. OVER HOW MANY YEARS DOES THE COMPANY PROPOSE TO AMORTIZE THIS ACCOUNTING DEFERRAL?

A. The Company proposes to amortize the CAP accounting deferral over a period of three years, resulting in an increase in purchased water expense of $119,167 per year.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-12 – ADJUST PURCHASED WATER EXPENSE.

A. Income statement adjustment IS-12, detailed on page 19 of the Appendix to Schedule C-2, is the pro forma adjustment necessary to recover the amortization of additional deferred CAP M&I capital charges now used and useful (rate base adjustment RB-3), and the ongoing CAP M&I capital and delivery charges for CAP water the Company is currently delivering to general service customers in the Pinal Valley service area.

As discussed above regarding rate base adjustment RB-3, the Company proposes to include in rate base additional deferred CAP M&I capital charges of $4,398,823 to be amortized to expense over a period of 20 years, consistent with prior Commission practice.[18] The annual amortization associated with this portion of the adjustment is $219,941, which is charged to purchased water expense. The remainder of this adjustment reflects the ongoing CAP M&I capital and delivery charges, net of offsetting payments received from the groundwater savings facility operators, for 5,000 AF of CAP water the Company is currently delivering to general service customers in the Pinal Valley service area. Income statement adjustment IS-12 increases operating expenses by $934,941 in the Pinal Valley service area.

Q. WHAT ARE THE OFFSETTING PAYMENTS RECEIVED FROM THE GROUNDWATER SAVINGS FACILITY OPERATORS?

A. The Company's cost to deliver CAP water to the Central Arizona Irrigation and Drainage District and the Maricopa Stanfield Irrigation and Drainage District for storage at their groundwater savings facilities is offset by payments from these irrigation districts to the Company at a rate of $36 per AF, pursuant to the storage agreements between the Company and the irrigation districts. However, as explained in the Company's 2015 CAP Use Plans filed in this docket on August 7, 2015, and in the pre-filed testimony of Messrs. Garfield and Schneider, in 2016 the Company plans to begin construction of the Pinal Valley recharge and recovery facility. As each phase of the Pinal Valley recharge and recovery facility is completed, the Company will redirect deliveries of CAP water from the groundwater savings facilities to the recharge and recovery facility, at the same time gradually increasing total deliveries until its full allocation is used. Because the Company will not receive offsetting payments for CAP water that is delivered

[18] *See* Decision No. 68302 (Nov. 14, 2005), p. 6 at 7 – 26 & p. 7 at 1 – 4.

to the Pinal Valley recharge and recovery facility, the net cost of delivering CAP water to general service customers in the Pinal Valley service area will increase by the amount of the offsetting payments.

Q. WILL THE SAME BE TRUE FOR CAP WATER DELIVERED TO GENERAL SERVICE CUSTOMERS IN THE WHITE TANK SERVICE AREA?

A. Yes. As outlined in the 2015 CAP Use Plan for the White Tank service area, assuming the Company's proposed regulatory treatment of CAP related costs is approved in this proceeding, the Company plans to begin delivering a portion of its White Tank CAP water allocation to groundwater savings facilities in 2016, and plans to begin construction of the White Tank recharge and recovery facility beginning in 2018. As each phase of the White Tank recharge and recovery facility is completed, the Company will redirect deliveries of CAP water from the groundwater savings facilities to the White Tank recharge and recovery facility, at the same time gradually increasing total deliveries until its full allocation is used. These prudently incurred costs, which are not included in the adjusted Test Year, will increase annually.

Q. HOW DOES THE COMPANY PROPOSE TO RECOVER THESE KNOWN AND MEASURABLE INCREASES IN FUTURE PURCHASED WATER COSTS?

A. In order to recover increases in the prudently incurred cost of delivering renewable CAP water supplies to general service customers, the Company requests Commission approval of a CAP surcharge in this proceeding, which Mr. Harris addresses in more detail in Section VI of his pre-filed testimony. A CAP surcharge is required in the Pinal Valley and White Tank service areas to recover increases in the net per AF cost of CAP water (including scheduled increases in M&I capital and delivery charges, and the elimination of offsetting payments from the groundwater savings facility operators), increased costs related to the quantity of CAP water delivered to general service customers, and the recovery

of additional deferred CAP M&I capital charges (both return and amortization) that will become used and useful.

Q. ARE THE CAP M&I CAPITAL AND DELIVERY CHARGES SCHEDULED TO INCREASE IN FUTURE YEARS?

A. Yes. Based on the CAP's most recently published rate schedule, attached to Mr. Harris' direct testimony as Exhibit JDH-8, CAP M&I capital and delivery charges will increase by 13.6% and 14.1%, respectively, by 2020. The following table summarizes the Company's projected purchased CAP water expense (not including the amortization of deferred CAP M&I capital charges) in the Pinal Valley service area through 2020:

		Net Delivery Cost[19]		Capital Charges		Total Charges	
Year	Acre-Feet Delivered	Total	Per Acre-Foot	Total	Per Acre-Foot	Total	Per Acre-Foot
2015	5,000	$247,500	$50	$110,000	$22	$357,500	$72
2016	6,000	$750,000	$125	$138,000	$23	$888,000	$148
2017	7,000	$1,005,400	$144	$168,000	$24	$1,173,400	$168
2018	8,000	$1,274,400	$159	$200,000	$25	$1,474,400	$184
2019	8,956	$1,523,928	$170	$223,900	$25	$1,747,828	$195
2020	8,956	$1,755,376	$196	$223,900	$25	$1,979,276	$221

The following table summarizes the Company's projected purchased CAP water expense (not including the amortization of deferred CAP M&I capital charges) in the White Tank service area through 2020:

		Net Delivery Cost[20]		Capital Charges		Total Charges	
Year	Acre-Feet Delivered	Total	Per Acre-Foot	Total	Per Acre-Foot	Total	Per Acre-Foot
2015	0	$0	$0	$0	$0	$0	$0
2016	375	$54,375	$145	$8,625	$23	$63,000	$168
2017	500	$75,000	$150	$12,000	$24	$87,000	$174
2018	625	$106,875	$171	$15,625	$25	$122,500	$196
2019	750	$130,500	$174	$18,750	$25	$149,250	$199
2020	968	$189,728	$196	$24,200	$25	$213,928	$221

[19] Per Table 2-4 of Pinal Valley 2015 CAP Use Plan. Does not include additional costs as a result of additional deferred CAP M&I capital charges becoming used and useful.

[20] Per Table 2-4 of White Tank 2015 CAP Use Plan. Does not include additional costs as a result of additional deferred CAP M&I capital charges becoming used and useful.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-13 – ADJUST PURCHASED POWER EXPENSE.

A. Income statement adjustment IS-13, detailed on page 20 of the Appendix to Schedule C-2, is the pro forma adjustment necessary to reflect increases in the rates paid for electric power in the Western Group. Income statement adjustment IS-13 increases operating expenses in the Western Group by $73,615.

Q. DOES THE COMPANY REQUEST COMMISSION APPROVAL OF A PURCHASED POWER ADJUSTER IN THIS PROCEEDING?

A. Yes. The Company requests Commission approval of purchased power adjuster in this proceeding. I address the Company's request in further detail below in Section IX of this testimony.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-14 – ADJUST RATE CASE EXPENSE.

A. Income statement adjustment IS-14, detailed on page 21 of the Appendix to Schedule C-2, is the pro forma adjustment necessary to recover the cost of preparing this rate case. The Company requests recovery of rate case expense currently estimated at $486,274, amortized over three years. This adjustment increases operating expenses by $40,606 in the Western Group.

Q. HOW DID THE COMPANY ARRIVE AT ITS ESTIMATED RATE CASE EXPENSE OF $486,274?

A. The Company's estimated rate case expense is based upon a rate case expense budget prepared by the Company in consultation with outside legal counsel and the Company's cost of capital expert witness, Ms. Ahern. Estimates of costs such as public notice, printing, and other such expenses were based upon costs actually incurred during prior Company rate proceedings.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-15 – NORMALIZE UNCOLLECTIBLES EXPENSE.

A. Income statement adjustment IS-15, detailed on page 22 of the Appendix to Schedule C-2, is an adjustment to normalize the expense write-off of uncollectible accounts. The Company used a five-year average uncollectible rate to normalize this expense. Income statement adjustment IS-15 increases operating expenses by $14,300 in the Western Group.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-16 – ADJUST SERVICE VEHICLE COSTS.

A. Income statement adjustment IS-16, detailed on page 23 of the Appendix to Schedule C-2, is the adjustment necessary to reflect current costs related to the Company's fleet of service vehicles, as well as six additional service vehicles for the new positions reflected in income statement adjustment IS-8. Income statement adjustment IS-16 increases operating expenses by $95,380 in the Western Group.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-17 – ADJUST MISCELLANEOUS EXPENSE – RENT, POSTAGE & LOBBYING.

A. Income statement adjustment IS-17, detailed on page 24 of the Appendix to Schedule C-2, is the adjustment necessary to reflect increases in office rents and postage, and the removal of lobbying expenses incurred during the Test Year. Income statement adjustment IS-17 increases operating expenses by $296 in the Western Group.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-18 – ADJUST ARSENIC TREATMENT EXPENSE.

A. Income statement adjustment IS-18, detailed on page 25 of the Appendix to Schedule C-2, is the adjustment necessary to normalize the cost of operating the Company's Henness Road arsenic removal facility ("Henness Plant") in the Pinal Valley service area. The Henness Plant was shut down for repairs from January through May of the Test Year. As a result, the actual costs incurred to operate this plant during the Test Year, which include chemicals and waste/sludge

removal, are not representative of the actual cost to operate this plant during the period new rates will be in effect. The Company relied on the actual cost to operate the Henness Plant from January 2015, through May 2015, in normalizing this cost. Income statement adjustment IS-18 increases expenses by $50,332 in the Pinal Valley service area.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-19 – NORMALIZE TANK MAINTENANCE EXPENSE.

A. Income statement adjustment IS-19, detailed on page 26 of the Appendix to Schedule C-2, is the adjustment necessary to normalize the cost of tank maintenance. The normalized cost of tank maintenance is based on the Company's tank maintenance program, under which storage tanks are inspected and cleaned on a routine basis, interiors are recoated every 14 years and exteriors are painted every seven years. Mr. Schneider discusses the Company's tank maintenance program, including the associated costs, in Section IX of his direct testimony. Income statement adjustment IS-19 increases expenses by $174,048 in the Western Group.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-20 – ADJUST DEPRECIATION EXPENSE.

A. Income statement adjustment IS-20, detailed on pages 27 - 31 of the Appendix to Schedule C-2, adjusts depreciation expense to reflect the Company's adjusted end-of-Test Year plant balances and current depreciation rates. The effect of this adjustment is to annualize depreciation expense related to utility plant placed in service during the Test Year, as well as post-Test Year utility plant, which is discussed in Section VI.B, above. This adjustment to annualize depreciation expense increases operating expenses by $367,759 in the Western Group.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-21 – SYNCHRONIZE INTEREST EXPENSE WITH RATE BASE.

A. Income statement adjustment IS-21, detailed on page 32 of the Appendix to Schedule C-2, is the adjustment necessary to synchronize interest expense with the Test Year adjusted rate base. Although this adjustment is "below-the-line," it is required in order to properly calculate the adjustment to federal and state income taxes (income statement adjustment IS-24), as well as to illustrate the effect of all other pro forma adjustments and the required increase in gross revenues on net income. Income statement adjustment IS-21 increases interest expense by $447,636 in the Western Group.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-22 – REMOVE OTHER INCOME AND DEDUCTIONS.

A. Income statement adjustment IS-22, detailed on page 33 of the Appendix to Schedule C-2, is another below-the-line adjustment required to properly illustrate the effect of all other pro forma adjustments and the required increase in gross revenues on net income.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-23 – ADJUST PROPERTY TAXES.

A. Income statement adjustment IS-23, detailed on pages 34 - 35 of the Appendix to Schedule C-2, adjusts property taxes to reflect the changes in revenues proposed in the Company's rate application. The pro forma adjustment utilizes the current methodology used by the Arizona Department of Revenue to determine an amount that is referred to as "full cash value" for each of the Western Group service areas. Income statement adjustment IS-23 increases Test Year property taxes in the Western Group by $50,623.

Q. PLEASE EXPLAIN INCOME STATEMENT ADJUSTMENT IS-24 – ADJUST INCOME TAXES.

A. Income statement adjustment IS-24, detailed on page 36 - 38 of the Appendix to Schedule C-2, adjusts Federal and state income taxes to reflect the tax effect of

all other pro forma adjustments. Income statement adjustment IS-24 decreases Test Year income tax expense in the Western Group by $1,402,912.

VIII. Cost of Service Study ("COSS") and Rate Design

Q. WHAT IS A COSS?

A. A COSS is a study which allocates a utility's investment and expenses to different classes of customers and provides a basis for allocating the revenue requirement to customer classes through rate design. Under cost of service ratemaking, each customer class should pay rates that are commensurate with the cost of providing service to that class. In reality, rates that are not uniformly consistent with cost of service principles can still be found fair and equitable and thus in the public interest.[21] Such rate structures may include the intended subsidization of one particular class of customers by another class of customers for the overall benefit of all customers, subsidization within a customer class through a lifeline rate, or the subsidization of smaller volume users by larger volume users through the use of a conservation-oriented, or inverted tier, rate design, as approved by the Commission pursuant to its established rate setting standards and water conservation policies.

Q. WHY DID YOU PREPARE A COSS IN THIS PROCEEDING?

A. The COSS, set forth in Schedules G-1 through G-7 of the Company's application, provides a starting point for determining how the revenue requirement should be allocated to the residential, commercial, industrial, large industrial and private fire service customer classes. Additionally, the COSS shows how revenues should be allocated between fixed basic service charges and volumetric/commodity rates. The COSS is also useful in developing a residential rate structure that provides incentives for conservation in the form of greater cost discounts for reduced usage.

[21] Assuming those rates, in the aggregate, produce revenues that are equal to the cost of providing service.

Q. HOW DID YOU PREPARE THE COMPANY'S COSS?

A. I prepared the COSS using the "commodity demand" method, whereby costs (both capital-related and operating) are separated into four functions: commodity, demand, customer and direct private fire. Commodity costs are costs that tend to vary with the quantity of water produced. Demand costs are associated with providing facilities to meet peak demands placed on the system by customers. Customer costs comprise those costs associated with serving customers regardless of the amount of water they use. Direct private fire costs are those costs that are directly associated with private fire service. These cost functions are then distributed to the different customer classes to derive an estimate of the cost of providing service to each class. The Company's COSS at present and proposed rates is summarized in Schedules G-1 and G-2, respectively.

Q. HOW DID YOU DEVELOP THE COMPANY'S PROPOSED RATE DESIGN?

A. The COSS provides a basis for designing separate rate schedules for the different customer classes. Once a target revenue requirement was determined for each customer class using the "commodity demand" method, and certain policy issues (discussed below) were taken into consideration, rates were developed to generate the revenue requirement. The Company's rate design for each service area is shown in Schedule H-3 and a typical bill analysis is shown in Schedule H-4.

Q. WHAT POLICY ISSUES WERE CONSIDERED WHEN DEVELOPING THE COMPANY'S PROPOSED RATES?

A. The Company took five policy issues into consideration when developing its proposed rate design in this proceeding. They are gradualism, residential subsidies, affordability, conservation and cost recovery.

Q. PLEASE DISCUSS GRADUALISM.

A. The first policy issue considered when developing the Company's proposed rate design was gradualism. As shown on page 1, column B, lines 25 and 27 of Schedule G-1 (Rate of Return by Customer Class), the adjusted Test Year rate of return provided by the residential customer class is 2.67%, compared to the Company's required rate of return of 8.93%. This difference shows that current residential rates in the Western Group are significantly lower than cost. However, as shown by the rate of return provided by the residential class under proposed rates of 7.97%, shown on page 1, column B, line 24 of Schedule G-2 (Cost of Service Summary – Proposed Rates), the Company proposes not to increase residential rate revenues to full cost of service in this proceeding. Instead, the Company proposes to bring rates closer to the cost of service in several gradual steps rather than in one large step. This principle of gradualism is a continuation of the Company's methodology in its last total-Company rate proceeding, which the Commission found to be just and reasonable in Decision 71845.[22]

Q. DOES THE COMPANY'S APPROACH DESCRIBED ABOVE PROTECT AGAINST RESIDENTIAL SUBSIDIES?

A. Yes. Under the Company's proposed rate design, the residential customer class will not subsidize any other customer classes. This is accomplished by holding residential revenues at or below the cost of service, as shown on Schedule G-2 (line 24).

Q. DOES THE COMPANY'S APPROACH PROMOTE AFFORDABILITY?

A. Yes. The Company's approach serves to promote affordability by providing a life-sustaining commodity to residential customers at prices significantly lower than cost. The resulting cost discounts, shown on line 50 of Schedule H-4, range from 10.75% to 14.40% at the average level of usage.

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[22] See Decision No. 71845, p. 84 at 21.

Q. DOES THE COMPANY'S PROPOSED RATE DESIGN INCLUDE ANY ADDITIONAL REDUCTIONS FOR RESIDENTIAL CUSTOMERS?

A. Yes. The Company's proposed rate design also incorporates a lifeline rate which provides a minimal amount of water required for basic needs at reductions from cost ranging from 15.66% to 24.56% to all residential 5/8-inch customers independent of income level or ability to pay, thus ensuring residential customers have access to water for basic needs at the lowest possible cost. These reductions from cost are shown on line 47 of Schedule H-4.

Q. WHAT ABOUT LARGE FAMILIES?

A. The Company's proposed rate design provides an additional break to families who use higher than the average monthly usage, but who can manage their water use such that they avoid crossing into the highest rate tier. These families will experience a reduction in the third-tier quantity rate if they have a 5/8 x 3/4-inch meter, or a reduction in the second tier quantity rate if they have a 1-inch or larger size meter. The Company is able to provide this rate reduction by incorporating an additional rate tier, discussed further below, into its proposed rate design.

Q. DOES THE COMPANY'S PROPOSED RATE DESIGN ENCOURAGE CONSERVATION?

A. Yes. In addition to providing fair and equitable discounts to residential customers, the Company's proposed residential and commercial rate designs encourage conservation by incorporating inclining-block, or tiered, rates. The current residential rate design in the Western Group incorporates three tiers for customers with a 5/8 x 3/4-inch meter, and two tiers for customers with a meter larger than 5/8 x 3/4-inch. The current commercial rate design incorporates two tiers for all customers. In this proceeding, the Company proposes to add an additional tier to the quantity rate for all residential and commercial meter sizes. Quantity rates for water usage occurring in the upper tiers send a price signal to

customers with high monthly usage, and the revenues generated in these upper tiers help fund the reductions from cost provided to customers who conserve water.

Q. WILL THE COMPANY RECOVER ITS COST OF SERVICE WHEN CUSTOMERS CONSERVE WATER?

A. No. Because rates are traditionally set to recover only the cost of service and no more, and a significant portion of the Company's fixed costs are recovered through the quantity rate, the Company will not recover its cost of service when customers reduce the amount of water they use. This situation is the origin of what is known as the "*utility death spiral*" - when customers use less water in a system with costs that are mostly fixed and revenues that are mostly variable, revenues will drop faster than costs and produce losses. The typical response (raising unit prices) reduces demand even further, leading to additional losses, and so on.[23] This is a particular concern of utility managers in jurisdictions such as Arizona, that do not allow for the tracking and recovery of fixed costs that go unrecovered as a result of declining usage from water conservation or other factors.

Q. HOW DOES THE COMPANY PROPOSE TO RECOVER ITS COSTS IN AN ENVIRONMENT OF DECLINING CUSTOMER USAGE IN THIS PROCEEDING?

A. As discussed above regarding income statement adjustment IS-7, the Company adjusted the Test Year sales volumes to reflect the known and measurable declines in residential usage per customer shown in Exhibit JMR-6. Additionally, the Company incorporated these reductions into the billing determinants used to design its proposed rates. Next, the Company increased the proportion of revenues recovered from the monthly fixed basic service charge, so as to avoid

[23] *See* Zetland, David. The End of Abundance: Economic Solutions to Water Scarcity. 2011. p. 41.

shifting excessive levels of fixed costs into the quantity rate. Finally, as mentioned above, the Company reduced the proportion of revenues recovered from the highest quantity rate tier by adding an additional tier to the residential and commercial rate designs. Each of these methods is discussed in more detail below.

Q. HAVE YOU PERFORMED ANY STATISTICAL STUDIES WHICH SUPPORT THE COMPANY'S FINDING THAT CUSTOMER USAGE IS DECLINING?

A. Yes. In the Company's 2007 Test Year total-Company general rate case (Docket No. W-01445A-08-0440), I conducted a statistical study of the effect of an inverted tier rate design on residential consumption in the Company's Western Group,[24] and two statistical studies of customer usage over time in each of the Company's systems that had inverted tier rates in effect at that time.[25] Each of those studies showed a marked decline in residential usage. Additionally, in the Company's 2010 Test Year rate proceedings for its Western and Eastern Groups (Docket Nos. W-01445A-10-0517 and W-01445A-11-0310, respectively), I conducted multiple regression analyses showing that residential and combined residential and commercial per customer usage is declining in all but one system that had increasing block/tiered rates in effect at the beginning of 2010.[26] Finally, in the Company's 2011 Test Year rate case for its Northern Group (Docket No. W-01445A-12-0348), I conducted a multiple regression analysis showing a statistically significant annual decline in residential usage per customer in the Company's Navajo and Verde Valley service areas of 2.03% and 2.71%, respectively, over the five year period ending with the test year in that proceeding. As mentioned in Section VII, above, the Company's analysis, which the Commission found credible,[27] was formally presented to the NARUC Water

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[24] See Docket No. 08-0440, Reiker direct testimony, Exhibit JMR-4.
[25] See Docket No. 08-0440, Reiker rebuttal testimony, Exhibits JMR-RB4 through JMR-RB7, and Reiker rate design and cost of service rebuttal testimony, Exhibit JMR-RBEX3.
[26] *See* Docket No. 10-0517, Exhibit JMR-5 and Docket No. 11-0310, Exhibit JMR-1.
[27] *See* footnote 16.

Committee in the presentation titled "How Low Can it Go – Declining Customer Usage," at NARUC's 2014 Summer Committee Meetings. A copy of that presentation is attached to this testimony as Exhibit JMR-5.

Q. HAVE YOU PERFORMED ANY ADDITIONAL STUDIES OF CUSTOMER USAGE FOR PURPOSES OF THIS PROCEEDING?

A. Yes. The Company's weather and usage normalization model presented in Section VII, above, and summarized in Exhibit JMR-6, shows an annual decline in residential usage while controlling for weather conditions of 2.64%, 5.30% and 4.95% in the Pinal Valley, White Tank and Ajo systems, respectively, over the five-year period ending with the Test Year. The results of this recent study are summarized in the table below:

Annual Growth/(Decline) in Usage Per Residential Customer

	Percentage Increase / (Decline)	t-Statistic	Statistically Significant?
Pinal Valley	(2.64%)	(5.59)	Yes
White Tank	(5.30%)	(7.55)	Yes
Ajo	(4.95%)	(6.14)	Yes

As shown in Exhibit JMR-6 and the table above, the results of this new study are statistically significant and consistent with the Company's past findings, as well as the findings of experts who have conducted published research on the subject of declining usage.

Q. WHAT IS THE PUBLISHED RESEARCH YOU REFER TO?

A. Most notably, I am referring to a 2010 research project sponsored by the Water Research Foundation and the U.S. Environmental Protection Agency ("WRF-EPA Study") for the purpose of studying declining trends in household water usage, drawing conclusions on the magnitude and causes of declining usage, and providing a tool for projecting such usage.[28] Another study of customer usage found a decrease in residential usage between 2001 and 2010 across

[28] "North America Residential Water Usage Trends Since 1992." Water Research Foundation. © 2010. Pp. xxi, xxvii.

several states, with the reporting authors agreeing with the conclusions of the WRF-EPA Study.[29]

Q. WHAT WERE THE FINDINGS OF THE WRF-EPA STUDY?

A. The WRF-EPA Study found a decline in annual residential usage at the national level of 0.44% per year since 1975. The decline was also pervasive at the regional level. Additionally, and more importantly for purposes of this proceeding, the WRF-EPA Study concluded that residential water usage will *continue* to decline, citing new federal regulations governing water conserving appliances:

> Another factor that will continue to lower residential water usage is the recently approved higher water efficiency standards for washing machines and dishwashers. Under the new legislation, new home dishwashers manufactured beginning in 2010 will be prohibited from using more than 4.5 or 6.5 gallons of water per cycle, depending on machine size. Beginning in 2011 all new home clothes washers will use at least [sic] 9.5 gallons per cycle per cubic foot that the clothes washer uses.[30]

Based on the results of the WRF-EPA Study showing that clothes washers represent approximately 21% of household indoor water consumption,[31] and an analysis of the new Federal guidelines estimating a decrease in the average number of gallons per load of 35%,[32] one can expect at least a 7.35% decline in indoor water usage in many households.

Q. BASED ON THE COMPANY'S OWN ANALYSIS, EVIDENCE AND FINDINGS CONCERNING DECLINING USAGE AND THAT OF PUBLISHED EXPERTS, SHOULD THE COMMISSION CONCLUDE THAT A KNOWN AND

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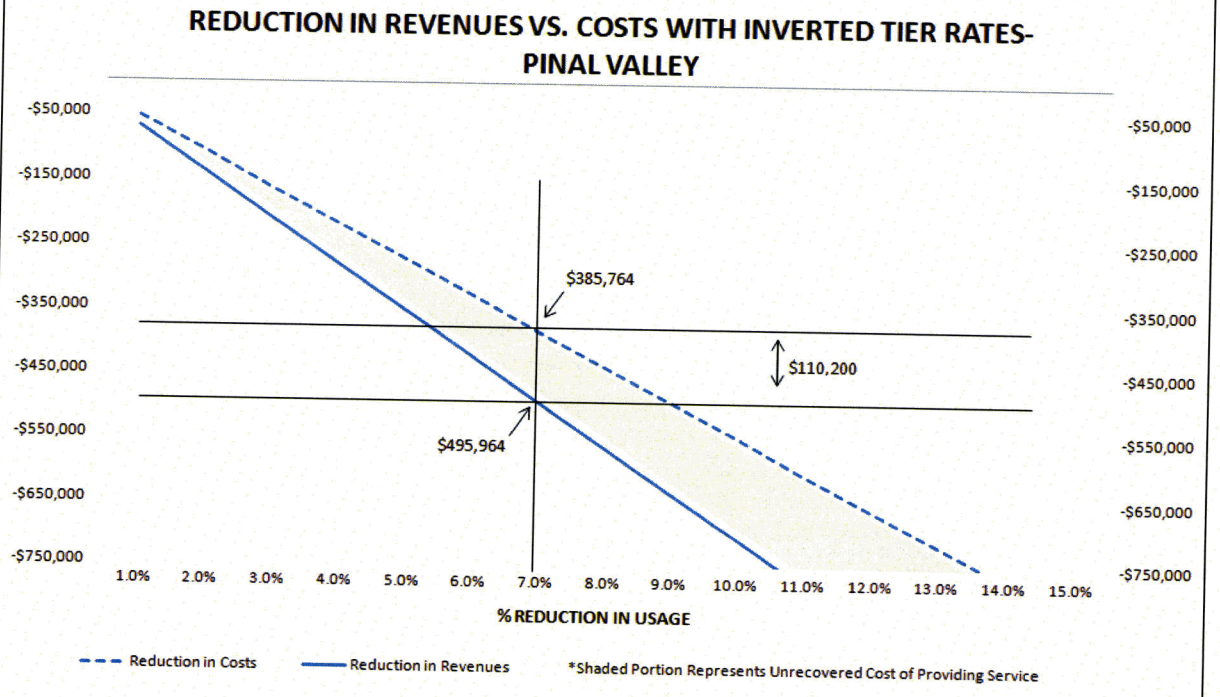
[29] "Declining Residential Water Use Presents Challenges, Opportunities." Opflow. May 2011.
[30] WRF-EPA. pp. xxvii – xxviii, 65 – 77.
[31] WRF-EPA. p. 47.
[32] "Declining Residential Water Use." Opflow. p. 19.

MEASURABLE DECLINE IN RESIDENTIAL USAGE WILL EXIST DURING THE TIME PERIOD NEW RATES ARE IN EFFECT?

A. Yes. The evidence shows that a known and measurable decline in residential per customer usage not only exists, but that it will persist throughout the period new rates are in effect. Accordingly, this change should be recognized and accounted for in the ratemaking process. Absent an adjustment or other appropriate mechanism designed to address declining usage, the level of fixed costs that go unrecovered will increase linearly from the first 1,000 gallons curtailed, and the Company will be unable to recover rising infrastructure-related and other costs from a shrinking sales base. The following graph demonstrates how, as customers curtail their usage, the level of unrecovered costs increases dramatically:



The graph shown above is based on the residential cost of service in the Pinal Valley service area and the Company's proposed rate design in this proceeding. The dashed line in the graph represents the reduction in adjusted

Test Year variable costs, while the solid line represents the reduction in revenues at increasing percentage reductions in usage. The shaded portion in the graph represents the amount of the Pinal Valley system's residential cost of service that goes unrecovered as a result of declining per customer sales. As the graph shows, a modest 7% reduction in customer usage reduces revenues and costs by $495,964 and $385,764, respectively. The difference, $110,200, represents unrecovered costs incurred by the Company, and ultimately borne by shareholders, to provide service to residential customers in the Pinal Valley service area. That significant shortfall in cost recovery increases linearly from the first 1,000 gallons curtailed by customers.

Q. HOW DID THE COMPANY ACCOUNT FOR THE KNOWN AND MEASURABLE DECLINES IN CUSTOMER USAGE DISCUSSED ABOVE?

A. As mentioned above, the Company adjusted Test Year revenues in income statement adjustment IS-7 to reflect the known and measurable decline in residential usage per customer shown in Exhibit JMR-6. These known and measurable declines are also reflected in the billing determinants used to design proposed rates, shown on Schedule H-5 beginning at page 3, line 45.

Q. PLEASE DISCUSS THE COMPANY'S SECOND METHOD OF RECOVERING ITS COSTS IN AN ENVIRONMENT OF DECLINING USAGE – BY INCREASING THE PERCENTAGE OF REVENUES RECOVERED FROM THE FIXED BASIC SERVICE CHARGE.

A. As shown on page 1, column A, lines 48 and 49 of Schedule G-1, the COSS shows that no less than 59% of the revenues in the Western Group should be recovered from the fixed basic service charge. Currently, the Company recovers only 42% of its revenues from the fixed basic service charge. However, in this proceeding the Company proposes to increase that percentage to 46%.

Q. PLEASE DISCUSS THE COMPANY'S PROPOSAL TO REDUCE THE PERCENTAGE OF REVENUES RECOVERED FROM THE HIGHEST RATE TIER.

A. As discussed above, the Company's proposed rate design incorporates an additional rate tier applicable to all residential and commercial customers. One of the benefits of this change is a reduction in the third-tier quantity rate for residential customers with a 5/8 x 3/4-inch meter, and a reduction in the second tier quantity rate for all other residential and commercial customers. Additionally, this approach allows for a reduction in the percentage of revenues recovered from the highest quantity rate tier, while still sending an appropriate price signal to the highest water users. This was accomplished by setting the third tier break-over point at a level which targets approximately the top 10% of residential customers (in terms of monthly usage) with a 5/8 x 3/4-inch meter. A 25% reduction in usage billed in this tier can save nearly 250 million gallons annually.

Q. WHAT PERCENTAGE OF RESIDENTIAL BILLED USAGE IS SUBJECT TO THE HIGHEST RATE TIER UNDER THE CURRENT RATE DESIGN?

A. Under the current rate design, as much as 28% of billed usage, and nearly double the revenues, are allocated to the highest rate tier, thereby putting the Company at higher risk of not recovering a significant amount of fixed costs. The Company's proposed rate design in this proceeding is more reasonable in that it allocates a minimal percentage of billed usage and revenues (approximately 9% and 7%, respectively) to the highest rate tier, while still sending an appropriate price signal to the highest users.

Q. HOW DID YOU DETERMINE THE QUANTITY RATES FOR EACH OF THE TIERS IN THE COMPANY'S PROPOSED RATE DESIGN?

A. When incorporating an additional rate tier into the residential and commercial rate designs, the Company was careful to maintain the existing rate differential between the lowest and highest tiers. Under the current rate design, this

differential is 174% in the Pinal Valley and Ajo service areas, and 178% in the White Tank service area. Maintaining the current rate differential between the lowest and highest tiers while adding an additional tier serves to lessen the increased risk of revenue volatility, and allows for the reductions in quantity rates discussed above.

Q. HAS THE COMPANY EXPLORED ANY OTHER METHODS OF RECOVERING ITS FIXED COSTS IN AN ENVIRONMENT OF DECLINING CUSTOMER USAGE?

A. Yes. The Company has explored additional methods to recover its fixed costs in an environment of declining customer usage. These methods include revenue stabilization funds and water revenue adjustment mechanisms designed to fully address the revenue effects resulting from reductions in usage. While the Company doesn't believe the Commission is ready at this time to address these methods in a formal proceeding, the Company stands ready to address them whenever the Commission decides it is appropriate to do so.

Q. PLEASE DISCUSSS THE COMPANY'S PROPOSED INDUSTRIAL CLASS AND LARGE INDUSTRIAL CLASS RATE DESIGN?

A. Consistent with the rate design approved for industrial customers in Decisions 71845 (August 25, 2010), 73736 (February 20, 2013) and 74081 (September 23, 2013) and the rate design approved for large industrial customers in Decision 73144, the Company proposes a single-tier commodity rate for all industrial customers in this proceeding. A single tier, or flat, commodity rate is appropriate for industrial customers who have relatively homogeneous and low peak-to-average usage patterns.

Q. WHAT IS THE COMPANY PROPOSING WITH RESPECT TO CUSTOMERS PURCHASING WATER FOR CONSTRUCTION?

A. The Company proposes to charge the same inverted-tier rates for construction water as those proposed for commercial customers with the corresponding meter size.

Q. IS THE COMPANY PROPOSING ANY REVISIONS TO ITS GENERAL SERVICE TARIFF?

A. Yes. The Company's current general service tariff does not offer a rate for a 3/4-inch size meter. In this proceeding the Company proposes to add such a rate. The Company's proposed rate for customers with a 3/4-inch meter is shown on Schedule H-3 for the Pinal Valley, White Tank and Ajo service areas.

Q. IS THE COMPANY PROPOSING ANY CHANGES TO ITS SERVICE CHARGES?

A. Yes. As shown on page 16 of Schedule H-3, the Company proposes to update its refundable charges for service lines two inches and smaller to reflect the service line installation charges recommended by Staff in their memo dated November 26, 2013.[33] The Company also proposes to add clarifying language to the existing footnote stating that parties are required to pay the actual cost of 5/8-inch through 2-inch service lines when cutting a roadway or sidewalk is required. Finally, in order to more equitably apportion the cost of deploying the Company's automated meter reading ("AMR") program, the Company proposes to charge the actual cost for meter installations of all sizes. Per Commission rule, service line and meter installation charges are treated as refundable advances and have no effect on operating revenue.

IX. Purchased Power Adjuster

Q. IS THE COMPANY REQUESTING COMMISSION APPROVAL OF A PURCHASED POWER ADJUSTER?

[33] http://www.azcc.gov/Divisions/Utilities/forms/SLmeterchargers2013.pdf?d=495

A. Yes. The Company requests Commission approval and re-activation of the Company's purchased power adjuster tariff, AM-253, attached to this testimony as Exhibit JMR-7. The adjuster mechanism can provide the Company an opportunity to recover the increased cost of electric power to operate its Western Group distribution systems. A purchased power adjuster is reasonable given the fact that electric power costs represent a significant portion of total operating expenses, having accounted for approximately 21% of total operation and maintenance expenses during the Test Year. The cost of electric power has also become increasingly volatile in recent years, particularly as a result of a number of surcharges and adjuster mechanisms authorized for and used by the Company's electric power providers. Most of these adjuster mechanisms and surcharges are a direct result of Commission decisions. The following table lists the 14 electric power surcharges and adjusters the Company currently pays in the Western Group:

Electric Provider Adjusters & Surcharges Currently in Effect in the Western Group

Provider	Surcharge /Adjuster	Description
Ajo Improvement Co.	RESS	Renewable Energy Standard Surcharge
Ajo Improvement Co.	PPFAC	Purchased Power & Fuel Adjuster
Arizona Public Service	REAC	Renewable Energy Standard Surcharge
Arizona Public Service	DSMAC	Demand Side Management Adjustment Charge
Arizona Public Service	EIS	Environmental Improvement Surcharge
Arizona Public Service	PSA	Power Supply Adjuster
Arizona Public Service	TCA	Transmission Cost Adjuster
Arizona Public Service	Four Corners	Four Corners Surcharge
Arizona Public Service	LFCR	Lost Fixed Cost Recovery Surcharge
Electrical Dist. No. 2	PCA	Power Cost Adjuster
Electrical Dist. No. 3	PPA	Purchased Power Adjuster
Electrical Dist. No. 4	PCA	Power Cost Adjuster
Hohokam Irrigation Dist.	PCA	Power Cost Adjuster
San Carlos Irrigation Dist.	PPA	Purchased Power Adjuster

Q. IS THE ADMINISTRATION OF A PPAM FOR THE COMPANY ALREADY SET FORTH IN A TARIFF PREVIOUSLY APPROVED BY THE COMMISSION?

A. Yes. The administration of the purchased power adjuster is spelled out in the Company's AM-253 tariff, which the Commission had previously approved.[34] The AM-253 tariff, which was deactivated by the Commission in Decision 71845, sets forth all calculations and requirements of the Company, and provides a threshold increase or decrease in rates that must be met before an adjustment can be made. As a result of the simplicity of the purchased power adjuster set forth in the AM-253 tariff, the average processing time from the date of filing for a purchased power rate change to Commission approval was just 55 days based on the Company's last nine adjuster filings.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

[34] The previously approved AM-253 tariff, attached as Exhibit JMR-7, calculates the purchased power adjustment per 100 gallons pumped. A new AM-253 tariff, if approved by the Commission in this proceeding, will reflect the Company's current practice of reporting gallons pumped and sold in 1,000-gallon units.

EXHIBIT JMR-1

ARIZONA WATER COMPANY
Test Year Ended December 31, 2014
Central Arizona Project ("CAP") Municipal & Industrial ("M&I") Fee True-up

Pinal Valley System (Casa Grande & Coolidge combined)

Line No.	Description	[A] Projection Based on Dec. No. 68302 Cost/AF	[B] Customer Growth	[C] $ Amount	[D] Amt. Incl. in Rate Base	[E]	[F] Actual Activity AFUDC Rate	[G] Actual Activity Activity Thru. Dec. '10	[H] Pro Forma Balance [G - D]
1	M&I Deferred Balance as of 12/31/2003			$ 4,428,918				$ 4,571,814	
2	Less: Amount Included in Rate Base - Dec. 68302				$ 142,896	279 AF[1]		(142,896)	
3	2004 CAP M&I charges	$ 30 /AF		318,150				326,520	
4	NP-274 Tariff M&I Revenues			(98,370)				(98,371)	
5	AFUDC			250,126			5.09%	241,634	
6	Balacne as of 12/31/04			4,898,824				4,898,701	
7									
8	2005 CAP M&I charges	$ 28 /AF		296,940				282,984	
9	NP-274 Tariff M&I Revenues			(63,812)				(87,372)	
10	AFUDC			275,716			9.05%	475,966	
11	Balacne as of 12/31/05			5,407,668				5,570,279	
12									
13	2006 CAP M&I charges	$ 24 /AF		254,520				244,890	
14	NP-274 Tariff M&I Revenues			(54,696)				(76,340)	
15	CAP M&I Fees Collected		2,986	(563,088)				(1,719,229)	
16	Interest Earned on CAP Chgs. Pd. from '87 - '94			-				(53,250)	
17	AFUDC			262,864			8.62%	479,722	
18	Balacne as of 12/31/06			5,307,268				4,446,072	
19									
20	2007 CAP M&I charges	$ 21 /AF		222,705				228,564	
21	NP-274 Tariff M&I Revenues			(47,859)				(67,608)	
22	CAP M&I Fees Collected		3,202	(608,016)				(782,182)	
23	AFUDC			253,989			7.09%	316,494	
24	Less: Amount Included in Rate Base - Dec. 71845			-	$ 447,196	1,003 AF[2]		(447,196)	
25	Balacne as of 12/31/07			5,128,087				3,694,144	
26									
27	2008 CAP M&I charges	$ 21 /AF		222,705				212,238	
28	NP-274 Tariff M&I Revenues			(47,859)				(60,683)	
29	CAP M&I Fees Collected		3,202	(608,016)				(205,205)	
30	AFUDC			244,652			6.89%	310,858	
31	Balacne as of 12/31/08			4,939,569				3,951,352	
32									
33	2009 CAP M&I charges	$ 21 /AF		222,705				179,586	
34	NP-274 Tariff M&I Revenues			(47,859)				(51,487)	
35	CAP M&I Fees Collected		3,202	(608,016)				(43,780)	
36	AFUDC			234,828			6.89%	322,446	
37	Balacne as of 12/31/09			4,741,227				4,358,117	
38									
39	2010 CAP M&I charges	$ 21 /AF		222,705				163,260	
40	NP-274 Tariff M&I Revenues			(47,859)				(43,810)	
41	CAP M&I Fees Collected		3,202	(608,016)				(52,341)	
42	AFUDC			224,492			6.89%	272,879	
43	Balacne as of 12/31/10			4,532,549				4,698,105	
44									
45	2011 CAP M&I charges	$ 21 /AF		222,705				163,260	
46	NP-274 Tariff M&I Revenues			(47,859)				(44,246)	
47	CAP M&I Fees Collected		3,202	(608,016)				(27,664)	
48	AFUDC			213,619			6.89%	332,612	
49	Balacne as of 12/31/11			4,312,998				5,122,068	
50									
51	2012 CAP M&I charges	$ 21 /AF		222,705				163,260	
52	NP-274 Tariff M&I Revenues			(47,859)				(43,587)	
53	CAP M&I Fees Collected		3,202	(608,016)				(5,457)	
54	AFUDC			202,177			6.89%	359,214	
55	Balacne as of 12/31/12			4,082,005				5,595,498	

ARIZONA WATER COMPANY
Test Year Ended December 31, 2014
Central Arizona Project ("CAP") Municipal & Industrial ("M&I") Fee True-up

Pinal Valley System (Casa Grande & Coolidge combined)

Line No.	Description	[A] Projection Based on Dec. No. 68302 Cost/AF	[B] Customer Growth	[C] $ Amount	[D] Amt. Incl. in Rate Base	[E]	[F] Actual Activity AFUDC Rate	[G] Activity Thru. Dec. '10	[H] Pro Forma Balance [G - D]
1									
2	2013 CAP M&I charges	$ 21 /AF		222,705				190,470	
3	NP-274 Tariff M&I Revenues			(47,859)				(43,340)	
4	CAP M&I Fees Collected		3,202	(608,016)				(38,466)	
5	AFUDC			190,141			6.89%	391,906	
6	Balacne as of 12/31/13			3,838,976				6,096,068	
7									
8	2014 CAP M&I charges	$ 21 /AF		222,705				228,564	
9	NP-274 Tariff M&I Revenues			(47,859)				(57,715)	
10	CAP M&I Fees Collected		3,202	(608,016)				(7,787)	
11	AFUDC			177,477			6.89%	428,840	
12	Balacne as of 12/31/14			3,583,283	$ 4,398,823	5,000 AF[3]		6,687,970	$ 2,289,147
13									
14	2015 CAP M&I charges	$ 21 /AF		222,705					
15	NP-274 Tariff M&I Revenues			(47,859)					
16	CAP M&I Fees Collected		3,202	(608,016)					
17	AFUDC			164,153					
18	Balacne as of 12/31/15			3,314,266					
19									
20	2016 CAP M&I charges	$ 21 /AF		222,705					
21	NP-274 Tariff M&I Revenues			(47,859)					
22	CAP M&I Fees Collected		3,202	(608,016)					
23	AFUDC			150,134					
24	Balacne as of 12/31/16			3,031,230					
25									
26	2017 CAP M&I charges	$ 21 /AF		222,705					
27	NP-274 Tariff M&I Revenues			(47,859)					
28	CAP M&I Fees Collected		3,202	(608,016)					
29	AFUDC			135,385					
30	Balacne as of 12/31/17			2,733,445					
31									
32	2018 CAP M&I charges	$ 21 /AF		222,705					
33	NP-274 Tariff M&I Revenues			(47,859)					
34	CAP M&I Fees Collected		3,202	(608,016)					
35	AFUDC			119,867					
36	Balacne as of 12/31/18			2,420,142					
37									
38	2019 CAP M&I charges	$ 21 /AF		222,705					
39	NP-274 Tariff M&I Revenues			(47,859)					
40	CAP M&I Fees Collected		3,202	(608,016)					
41	AFUDC			103,541					
42	Balacne as of 12/31/19			2,090,513					
43									
44	2020 CAP M&I charges	$ 21 /AF		222,705					
45	NP-274 Tariff M&I Revenues			(47,859)					
46	CAP M&I Fees Collected		3,202	(608,016)					
47	AFUDC			86,365					
48	Balacne as of 12/31/20			1,743,708					
49									
50	2021 CAP M&I charges	$ 21 /AF		222,705					
51	NP-274 Tariff M&I Revenues			(47,859)					
52	CAP M&I Fees Collected		3,202	(608,016)					
53	AFUDC			68,292					
54	Balacne as of 12/31/21			1,378,830					
55									

ARIZONA WATER COMPANY
Test Year Ended December 31, 2014
Central Arizona Project ("CAP") Municipal & Industrial ("M&I") Fee True-up

Pinal Valley System (Casa Grande & Coolidge combined)

Line No.	Description	[A] Projection Based on Dec. No. 68302 Cost/AF	[B] Customer Growth	[C] $ Amount	[D] Amt. Incl. in Rate Base	[E]	[F] Actual Activity AFUDC Rate	[G] Actual Activity Activity Thru. Dec. '10	[H] Pro Forma Balance [G - D]
1									
2	2022 CAP M&I charges	$ 21 /AF							
3	NP-274 Tariff M&I Revenues			222,705					
4	CAP M&I Fees Collected			(47,859)					
5	AFUDC		3,202	(608,016)					
6	Balacne as of 12/31/22			49,278					
7				994,938					
8	2023 CAP M&I charges	$ 21 /AF							
9	NP-274 Tariff M&I Revenues			222,705					
10	CAP M&I Fees Collected			(47,859)					
11	AFUDC		3,202	(608,016)					
12	Balacne as of 12/31/23			29,273					
13				591,041					
14	2024 CAP M&I charges	$ 21 /AF							
15	NP-274 Tariff M&I Revenues			222,705					
16	CAP M&I Fees Collected			(47,859)					
17	AFUDC		3,202	(608,016)					
18	Balacne as of 12/31/24			8,227					
19				166,098					
20	2025 CAP M&I charges	$ 21 /AF							
21	NP-274 Tariff M&I Revenues			222,705					
22	CAP M&I Fees Collected			(47,859)					
23	AFUDC		3,202	(608,016)					
24	Balacne as of 12/31/25			(13,917)					
25				(280,989)					
26									
27									
28									
29									
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52									
53	[1]See Casa Grande CAP M&I Fee True-up, Footnote 1								
54	[2]See Casa Grande CAP M&I Fee True-up, Footnote 2								
55	[3]See Appendix to Schedule B-2 of rate application, Company proposed Rate Base Adjustment RB-3.								

EXHIBIT JMR-2

ARIZONA WATER COMPANY
Test Year Ended December 31, 2014
Central Arizona Project ("CAP") Municipal & Industrial ("M&I") Fee True-up

Pinal Valley System (Casa Grande)

Line No.	Description	[A] Cost/AF	[B] Customer Growth	[C] $ Amount	[D] Amt. Incl. in Rate Base	[E]	[F] AFUDC Rate	[G] Activity Thru. Dec. '10	[H] Pro Forma Balance [G - D]
		Projection Based on Dec. No. 68302					Actual Activity		
1	M&I Deferred Balance as of 12/31/2003			$ 3,382,907				$ 3,525,803	
2	Less: Amount Included in Rate Base - Dec. 68302				$ 142,896	279 AF[1]		(142,896)	
3	2004 CAP M&I charges	$ 30 /AF		258,150				266,520	
4	NP-274 Tariff M&I Revenues			(98,370)				(98,371)	
5	AFUDC			192,492			5.09%	186,400	
6	Balacne as of 12/31/04			3,735,179				3,737,456	
7									
8	2005 CAP M&I charges	$ 28 /AF		240,940				230,984	
9	NP-274 Tariff M&I Revenues			(63,812)				(87,372)	
10	AFUDC			212,160			9.05%	366,382	
11	Balacne as of 12/31/05			4,124,467				4,247,450	
12									
13	2006 CAP M&I charges	$ 24 /AF		206,520				199,890	
14	NP-274 Tariff M&I Revenues			(54,696)				(76,340)	
15	CAP M&I Fees Collected		1,986	(413,088)				(1,400,058)	
16	Interest Earned on CAP Chgs. Pd. from '87 - '94			-				(43,465)	
17	AFUDC			201,312			8.62%	366,304	
18	Balacne as of 12/31/06			4,064,515				3,293,781	
19									
20	2007 CAP M&I charges	$ 21 /AF		180,705				186,564	
21	NP-274 Tariff M&I Revenues			(47,859)				(67,608)	
22	CAP M&I Fees Collected		2,202	(458,016)				(581,632)	
23	AFUDC			194,857			7.09%	238,190	
24	Less: Amount Included in Rate Base - Dec. 71845				$ 447,196	1,003 AF[2]		$ (447,196)	
25	Balacne as of 12/31/07			3,934,202				2,622,099	
26									
27	2008 CAP M&I charges	$ 21 /AF		180,705				173,238	
28	NP-274 Tariff M&I Revenues			(47,859)				(60,683)	
29	CAP M&I Fees Collected		2,202	(458,016)				(189,205)	
30	AFUDC			188,067			6.89%	232,794	
31	Balacne as of 12/31/08			3,797,099				2,778,243	
32									
33	2009 CAP M&I charges	$ 21 /AF		180,705				146,586	
34	NP-274 Tariff M&I Revenues			(47,859)				(51,487)	
35	CAP M&I Fees Collected		2,202	(458,016)				(40,780)	
36	AFUDC			180,922			6.89%	239,302	
37	Balacne as of 12/31/09			3,652,851				3,071,864	
38									
39	2010 CAP M&I charges	$ 21 /AF		180,705				133,260	
40	NP-274 Tariff M&I Revenues			(47,859)				(43,810)	
41	CAP M&I Fees Collected		2,202	(458,016)				(49,952)	
42	AFUDC			173,405			6.89%	181,863	
43	Balacne as of 12/31/10			3,501,086				3,293,226	
44									
45	2011 CAP M&I charges	$ 21 /AF		180,705				133,260	
46	NP-274 Tariff M&I Revenues			(47,859)				(44,246)	
47	CAP M&I Fees Collected		2,202	(458,016)				(25,666)	
48	AFUDC			165,497			6.89%	233,290	
49	Balacne as of 12/31/11			3,341,413				3,589,864	
50									
51	2012 CAP M&I charges	$ 21 /AF		180,705				133,260	
52	NP-274 Tariff M&I Revenues			(47,859)				(43,587)	
53	CAP M&I Fees Collected		2,202	(458,016)				(5,457)	
54	AFUDC			157,176			6.89%	252,068	
55	Balacne as of 12/31/12			3,173,419				3,926,148	

ARIZONA WATER COMPANY
Test Year Ended December 31, 2014
Central Arizona Project ("CAP") Municipal & Industrial ("M&I") Fee True-up

Pinal Valley System (Casa Grande)

Line No.	Description	[A] Projection Based on Dec. No. 68302 Cost/AF	[B] Customer Growth	[C] $ Amount	[D] Amt. Incl. in Rate Base	[E]	[F] Actual Activity AFUDC Rate	[G] Activity Thru. Dec. '10	[H] Pro Forma Balance [G - D]
1									
2	2013 CAP M&I charges	$ 21 /AF		180,705				155,470	
3	NP-274 Tariff M&I Revenues			(47,859)				(43,340)	
4	CAP M&I Fees Collected		2,202	(458,016)				(33,269)	
5	AFUDC			148,422			6.89%	275,246	
6	Balacne as of 12/31/13			2,996,671				4,280,255	
7									
8	2014 CAP M&I charges	$ 21 /AF		180,705				186,564	
9	NP-274 Tariff M&I Revenues			(47,859)				(57,715)	
10	CAP M&I Fees Collected		2,202	(458,016)				(12,787)	
11	AFUDC			139,212			6.89%	301,300	
12	Balacne as of 12/31/14			2,810,713	$ 3,089,724	3,514 AF[3]		4,697,617	$ 1,607,893
13									
14	2015 CAP M&I charges	$ 21 /AF		180,705					
15	NP-274 Tariff M&I Revenues			(47,859)					
16	CAP M&I Fees Collected		2,202	(458,016)					
17	AFUDC			129,522					
18	Balacne as of 12/31/15			2,615,065					
19									
20	2016 CAP M&I charges	$ 21 /AF		180,705					
21	NP-274 Tariff M&I Revenues			(47,859)					
22	CAP M&I Fees Collected		2,202	(458,016)					
23	AFUDC			119,326					
24	Balacne as of 12/31/16			2,409,221					
25									
26	2017 CAP M&I charges	$ 21 /AF		180,705					
27	NP-274 Tariff M&I Revenues			(47,859)					
28	CAP M&I Fees Collected		2,202	(458,016)					
29	AFUDC			108,600					
30	Balacne as of 12/31/17			2,192,651					
31									
32	2018 CAP M&I charges	$ 21 /AF		180,705					
33	NP-274 Tariff M&I Revenues			(47,859)					
34	CAP M&I Fees Collected		2,202	(458,016)					
35	AFUDC			97,314					
36	Balacne as of 12/31/18			1,964,795					
37									
38	2019 CAP M&I charges	$ 21 /AF		180,705					
39	NP-274 Tariff M&I Revenues			(47,859)					
40	CAP M&I Fees Collected		2,202	(458,016)					
41	AFUDC			85,441					
42	Balacne as of 12/31/19			1,725,066					
43									
44	2020 CAP M&I charges	$ 21 /AF		180,705					
45	NP-274 Tariff M&I Revenues			(47,859)					
46	CAP M&I Fees Collected		2,202	(458,016)					
47	AFUDC			72,949					
48	Balacne as of 12/31/20			1,472,845					
49									
50	2021 CAP M&I charges	$ 21 /AF		180,705					
51	NP-274 Tariff M&I Revenues			(47,859)					
52	CAP M&I Fees Collected		2,202	(458,016)					
53	AFUDC			59,805					
54	Balacne as of 12/31/21			1,207,480					
55									

ARIZONA WATER COMPANY
Test Year Ended December 31, 2014
Central Arizona Project ("CAP") Municipal & Industrial ("M&I") Fee True-up

Pinal Valley System (Casa Grande)

Line No.	Description	[A] Projection Based on Dec. No. 68302 Cost/AF	[B] Customer Growth	[C] $ Amount	[D] Amt. Incl. in Rate Base	[E]	[F] Actual Activity AFUDC Rate	[G] Actual Activity Activity Thru. Dec. '10	[H] Pro Forma Balance [G - D]
1									
2	2022 CAP M&I charges	$ 21 /AF		180,705					
3	NP-274 Tariff M&I Revenues			(47,859)					
4	CAP M&I Fees Collected		2,202	(458,016)					
5	AFUDC			45,977					
6	Balacne as of 12/31/22			928,287					
7									
8	2023 CAP M&I charges	$ 21 /AF		180,705					
9	NP-274 Tariff M&I Revenues			(47,859)					
10	CAP M&I Fees Collected		2,202	(458,016)					
11	AFUDC			31,428					
12	Balacne as of 12/31/23			634,545					
13									
14	2024 CAP M&I charges	$ 21 /AF		180,705					
15	NP-274 Tariff M&I Revenues			(47,859)					
16	CAP M&I Fees Collected		2,202	(458,016)					
17	AFUDC			16,122					
18	Balacne as of 12/31/24			325,497					
19									
20	2025 CAP M&I charges	$ 21 /AF		180,705					
21	NP-274 Tariff M&I Revenues			(47,859)					
22	CAP M&I Fees Collected		2,202	(458,016)					
23	AFUDC			17					
24	Balacne as of 12/31/25			344					
25									
26									
27									
28									
29									
30									
31									
32									
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37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									

49 [1]During T.Y. 2003, 279 AF of untreated CAP Water were sold to golf courses who were not contractually obligated to reimburse the Company for a portion of previously deferred M&I charges.
50 Per Dec. 68302, this 279 AF was deemed used & useful. Therefore, (279/(8,884-2,000)=4.0529% X $3,525,803) = $142,896 in previously deferred M&I charges was included in rate base
51 to be amortized to expense over 20 years.
52 [2]During T.Y. 2007, 1,003 AF of untreated CAP water were sold to golf courses who were not contractually obligated to reimburse the Company for a portion of previously deferred M&I charges.
53 Per Dec. 71845, this 1,003 was deemed used & useful. Therefore, (1,003/(8,884 - 2,000) = 14.57% X $3,069,295 = $447,196 in previously deferred M&I charges was included in rate base
54 to be amortized to expense over 20 years.
55 [3]Pro rata portion of Company proposed Rate Base Adjustment RB-3, based on Dec. '14 balance of deferred charges. See Appendix to Schedule B-2 of rate application, Company proposed Rate Base Adjustment RB-3.

EXHIBIT JMR-3

ARIZONA WATER COMPANY
Test Year Ended December 31, 2014
Central Arizona Project ("CAP") Municipal & Industrial ("M&I") Fee True-up

Pinal Valley System (Coolidge)

Line No.	Description	[A] Projection Based on Dec. No. 68302 Cost/AF	[B] Customer Growth	[C] $ Amount	[D] Amt. Incl. in Rate Base	[E]	[F] Actual Activity AFUDC Rate	[G] Activity Thru. Dec. '10	[H] Pro Forma Balance [G - D]
1	M&I Deferred Balance as of 12/31/2003			$ 1,046,011	-			$ 1,046,011	
2									
3	2004 CAP M&I charges	$ 30 /AF		60,000				60,000	
4	NP-274 Tariff M&I Revenues			-				-	
5	AFUDC			57,634			5.09%	55,234	
6	Balacne as of 12/31/04			1,163,645				1,161,245	
7									
8	2005 CAP M&I charges	$ 28 /AF		56,000				52,000	
9	NP-274 Tariff M&I Revenues			-				-	
10	AFUDC			63,556			9.05%	109,584	
11	Balacne as of 12/31/05			1,283,201				1,322,829	
12									
13	2006 CAP M&I charges	$ 24 /AF		48,000				45,000	
14	NP-274 Tariff M&I Revenues			-				-	
15	CAP M&I Fees Collected		1,000	(150,000)				(319,171)	
16	Interest Earned on CAP Chgs. Pd. from '87 - '94			-				(9,785)	
17	AFUDC			61,552			8.62%	113,418	
18	Balacne as of 12/31/06			1,242,753				1,152,291	
19									
20	2007 CAP M&I charges	$ 21 /AF		42,000				42,000	
21	NP-274 Tariff M&I Revenues			-				-	
22	CAP M&I Fees Collected		1,000	(150,000)				(200,550)	
23	AFUDC			59,132			7.09%	78,304	
24									
25	Balacne as of 12/31/07			1,193,885				1,072,045	
26									
27	2008 CAP M&I charges	$ 21 /AF		42,000				39,000	
28	NP-274 Tariff M&I Revenues			-				-	
29	CAP M&I Fees Collected		1,000	(150,000)				(16,000)	
30	AFUDC			56,585			6.89%	78,064	
31	Balacne as of 12/31/08			1,142,470				1,173,109	
32									
33	2009 CAP M&I charges	$ 21 /AF		42,000				33,000	
34	NP-274 Tariff M&I Revenues			-				-	
35	CAP M&I Fees Collected		1,000	(150,000)				(3,000)	
36	AFUDC			53,906			6.89%	83,144	
37	Balacne as of 12/31/09			1,088,376				1,286,253	
38									
39	2010 CAP M&I charges	$ 21 /AF		42,000				30,000	
40	NP-274 Tariff M&I Revenues			-				-	
41	CAP M&I Fees Collected		1,000	(150,000)				(2,389)	
42	AFUDC			51,087			6.89%	91,016	
43	Balacne as of 12/31/10			1,031,463				1,404,880	
44									
45	2011 CAP M&I charges	$ 21 /AF		42,000				30,000	
46	NP-274 Tariff M&I Revenues			-				-	
47	CAP M&I Fees Collected		1,000	(150,000)				(1,998)	
48	AFUDC			48,122			6.89%	99,322	
49	Balacne as of 12/31/11			971,585				1,532,204	
50									
51	2012 CAP M&I charges	$ 21 /AF		42,000				30,000	
52	NP-274 Tariff M&I Revenues			-				-	
53	CAP M&I Fees Collected		1,000	(150,000)				-	
54	AFUDC			45,001			6.89%	107,146	
55	Balacne as of 12/31/12			908,586				1,669,350	

ARIZONA WATER COMPANY
Test Year Ended December 31, 2014
Central Arizona Project ("CAP") Municipal & Industrial ("M&I") Fee True-up

Pinal Valley System (Coolidge)

Line No.	Description	[A] Projection Based on Dec. No. 68302 Cost/AF	[B] Customer Growth	[C] $ Amount	[D] Amt. Incl. in Rate Base	[E]	[F] Actual Activity AFUDC Rate	[G] Activity Thru. Dec. '10	[H] Pro Forma Balance [G - D]
1									
2	2013 CAP M&I charges	$ 21 /AF		42,000				35,000	
3	NP-274 Tariff M&I Revenues			-				-	
4	CAP M&I Fees Collected		1,000	(150,000)				(5,197)	
5	AFUDC			41,719			6.89%	116,660	
6	Balacne as of 12/31/13			842,305				1,815,813	
7									
8	2014 CAP M&I charges	$ 21 /AF		42,000				42,000	
9	NP-274 Tariff M&I Revenues			-				-	
10	CAP M&I Fees Collected		1,000	(150,000)				5,000	
11	AFUDC			38,265			6.89%	127,540	
12	Balacne as of 12/31/14			772,570	$ 1,309,098	1,486 AF[1]		1,990,353	$ 681,255
13									
14	2015 CAP M&I charges	$ 21 /AF		42,000					
15	NP-274 Tariff M&I Revenues			-					
16	CAP M&I Fees Collected		1,000	(150,000)					
17	AFUDC			34,631					
18	Balacne as of 12/31/15			699,201					
19									
20	2016 CAP M&I charges	$ 21 /AF		42,000					
21	NP-274 Tariff M&I Revenues			-					
22	CAP M&I Fees Collected		1,000	(150,000)					
23	AFUDC			30,808					
24	Balacne as of 12/31/16			622,009					
25									
26	2017 CAP M&I charges	$ 21 /AF		42,000					
27	NP-274 Tariff M&I Revenues			-					
28	CAP M&I Fees Collected		1,000	(150,000)					
29	AFUDC			26,785					
30	Balacne as of 12/31/17			540,794					
31									
32	2018 CAP M&I charges	$ 21 /AF		42,000					
33	NP-274 Tariff M&I Revenues			-					
34	CAP M&I Fees Collected		1,000	(150,000)					
35	AFUDC			22,553					
36	Balacne as of 12/31/18			455,347					
37									
38	2019 CAP M&I charges	$ 21 /AF		42,000					
39	NP-274 Tariff M&I Revenues			-					
40	CAP M&I Fees Collected		1,000	(150,000)					
41	AFUDC			18,100					
42	Balacne as of 12/31/19			365,447					
43									
44	2020 CAP M&I charges	$ 21 /AF		42,000					
45	NP-274 Tariff M&I Revenues			-					
46	CAP M&I Fees Collected		1,000	(150,000)					
47	AFUDC			13,416					
48	Balacne as of 12/31/20			270,863					
49									
50	2021 CAP M&I charges	$ 21 /AF		42,000					
51	NP-274 Tariff M&I Revenues			-					
52	CAP M&I Fees Collected		1,000	(150,000)					
53	AFUDC			8,487					
54	Balacne as of 12/31/21			171,350					
55									

ARIZONA WATER COMPANY
Test Year Ended December 31, 2014
Central Arizona Project ("CAP") Municipal & Industrial ("M&I") Fee True-up

Pinal Valley System (Coolidge)

Line No.	Description	[A] Cost/AF	[B] Customer Growth	[C] $ Amount	[D] Amt. Incl. in Rate Base	[E]	[F] AFUDC Rate	[G] Activity Thru. Dec. '10	[H] Pro Forma Balance [G - D]
		Projection Based on Dec. No. 68302					Actual Activity		
1									
2	2022 CAP M&I charges	$ 21 /AF		42,000					
3	NP-274 Tariff M&I Revenues			-					
4	CAP M&I Fees Collected		1,000	(150,000)					
5	AFUDC			3,301					
6	Balacne as of 12/31/22			66,651					
7									
8	2023 CAP M&I charges	$ 21 /AF		42,000					
9	NP-274 Tariff M&I Revenues			-					
10	CAP M&I Fees Collected		1,000	(150,000)					
11	AFUDC			(2,155)					
12	Balacne as of 12/31/23			(43,504)					
13									
14	2024 CAP M&I charges	$ 21 /AF		42,000					
15	NP-274 Tariff M&I Revenues			-					
16	CAP M&I Fees Collected		1,000	(150,000)					
17	AFUDC			(7,895)					
18	Balacne as of 12/31/24			(159,399)					
19									
20	2025 CAP M&I charges	$ 21 /AF		42,000					
21	NP-274 Tariff M&I Revenues			-					
22	CAP M&I Fees Collected		1,000	(150,000)					
23	AFUDC			(13,934)					
24	Balacne as of 12/31/25			(281,333)					
25									
26									
27									
28									
29									
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53									
54									
55	[1]Pro rata portion of Company proposed Rate Base Adjustment RB-3, based on Dec. '14 balance of deferred charges. See Appendix to Schedule B-2 of rate application, Company proposed Rate Base Adjustment RB-3.								

EXHIBIT JMR-4

ARIZONA WATER COMPANY
Test Year Ended December 31, 2014
Central Arizona Project ("CAP") Municipal & Industrial ("M&I") Fee True-up

White Tank System

Line No.	Description	[A] Projection Based on Dec. No. 68302 Cost/AF	[B] Customer Growth	[C] $ Amount	[D] Amt. Incl. in Rate Base	[E]	[F] Actual Activity AFUDC Rate	[G] Activity Thru. Dec. '10	[H]
1	M&I Deferred Balance as of 12/31/2003			$ 506,268	-			$ 506,268	
2									
3	2004 CAP M&I charges	$ 30 /AF		29,040				29,040	
4	NP-274 Tariff M&I Revenues			-				-	
5	AFUDC			29,408			5.09%	26,726	
6	Balacne as of 12/31/04			564,716				562,034	
7									
8	2005 CAP M&I charges	$ 28 /AF		27,104				25,168	
9	NP-274 Tariff M&I Revenues			-				-	
10	AFUDC			30,840			9.05%	53,034	
11	Balacne as of 12/31/05			622,660				640,236	
12									
13	2006 CAP M&I charges	$ 24 /AF		23,232				21,780	
14	NP-274 Tariff M&I Revenues			-				-	
15	CAP M&I Fees Collected		141	(70,500)				(29,000)	
16	Interest Earned on CAP Chgs. Pd. from '87 - '94			-				(4,730)	
17	AFUDC			29,984			8.62%	56,370	
18	Balacne as of 12/31/06			605,376				684,656	
19									
20	2007 CAP M&I charges	$ 21 /AF		20,328				20,328	
21	NP-274 Tariff M&I Revenues			-				-	
22	CAP M&I Fees Collected		153	(76,500)				(542,838)	
23	AFUDC			28,619			7.09%	31,008	
24				-					
25	Balacne as of 12/31/07			577,823				193,154	
26									
27	2008 CAP M&I charges	$ 21 /AF		20,328				18,876	
28	NP-274 Tariff M&I Revenues			-				-	
29	CAP M&I Fees Collected		153	(76,500)				(94,667)	
30	AFUDC			27,183			6.89%	14,310	
31	Balacne as of 12/31/08			548,834				131,673	
32									
33	2009 CAP M&I charges	$ 21 /AF		20,328				15,972	
34	NP-274 Tariff M&I Revenues			-				-	
35	CAP M&I Fees Collected		153	(76,500)				131,669	(Refund of Hook-up fees to Pulte)
36	AFUDC			25,673			6.89%	14,252	
37	Balacne as of 12/31/09			518,335				293,566	
38									
39	2010 CAP M&I charges	$ 21 /AF		20,328				14,520	
40	NP-274 Tariff M&I Revenues			-				-	
41	CAP M&I Fees Collected		153	(76,500)				(1,651)	
42	AFUDC			24,083			6.89%	20,962	
43	Balacne as of 12/31/10			486,246				327,397	
44									
45	2011 CAP M&I charges	$ 21 /AF		20,328				14,520	
46	NP-274 Tariff M&I Revenues			-				-	
47	CAP M&I Fees Collected		153	(76,500)				(3,657)	
48	AFUDC			22,411			6.89%	23,366	
49	Balacne as of 12/31/11			452,485				361,626	
50									
51	2012 CAP M&I charges	$ 21 /AF		20,328				14,520	
52	NP-274 Tariff M&I Revenues			-				-	
53	CAP M&I Fees Collected		153	(76,500)				(2,447)	
54	AFUDC			20,652			6.89%	25,500	
55	Balacne as of 12/31/12			416,965				399,199	

ARIZONA WATER COMPANY
Test Year Ended December 31, 2014
Central Arizona Project ("CAP") Municipal & Industrial ("M&I") Fee True-up

White Tank System

Line No.	Description	[A] Projection Based on Dec. No. 68302 Cost/AF	[B] Customer Growth	[C] $ Amount	[D] Amt. Incl. in Rate Base	[E]	[F] Actual Activity AFUDC Rate	[G] Activity Thru. Dec. '10	[H]
1									
2	2013 CAP M&I charges	$ 21 /AF		20,328				16,940	
3	NP-274 Tariff M&I Revenues			-				-	
4	CAP M&I Fees Collected		153	(76,500)				(4,276)	
5	AFUDC			18,801			6.89%	27,938	
6	Balacne as of 12/31/13			379,594				439,801	
7									
8	2014 CAP M&I charges	$ 21 /AF		20,328				20,828	
9	NP-274 Tariff M&I Revenues			-				-	
10	CAP M&I Fees Collected		153	(76,500)				(10,522)	
11	AFUDC			16,854			6.89%	30,708	
12	Balacne as of 12/31/14			340,276				480,815	
13									
14	2015 CAP M&I charges	$ 21 /AF		20,328					
15	NP-274 Tariff M&I Revenues			-					
16	CAP M&I Fees Collected		153	(76,500)					
17	AFUDC			14,805					
18	Balacne as of 12/31/15			298,909					
19									
20	2016 CAP M&I charges	$ 21 /AF		20,328					
21	NP-274 Tariff M&I Revenues			-					
22	CAP M&I Fees Collected		153	(76,500)					
23	AFUDC			12,649					
24	Balacne as of 12/31/16			255,386					
25									
26	2017 M&I CAP charges	$ 21 /AF		20,328					
27	NP-274 Tariff M&I Revenues			-					
28	CAP M&I Fees Collected		153	(76,500)					
29	AFUDC			10,381					
30	Balacne as of 12/31/17			209,595					
31									
32	2018 CAP M&I charges	$ 21 /AF		20,328					
33	NP-274 Tariff M&I Revenues			-					
34	CAP M&I Fees Collected		153	(76,500)					
35	AFUDC			7,995					
36	Balacne as of 12/31/18			161,418					
37									
38	2019 CAP M&I charges	$ 21 /AF		20,328					
39	NP-274 Tariff M&I Revenues			-					
40	CAP M&I Fees Collected		153	(76,500)					
41	AFUDC			5,484					
42	Balacne as of 12/31/19			110,730					
43									
44	2020 CAP M&I charges	$ 21 /AF		20,328					
45	NP-274 Tariff M&I Revenues			-					
46	CAP M&I Fees Collected		153	(76,500)					
47	AFUDC			2,843					
48	Balacne as of 12/31/20			57,401					
49									
50	2021 CAP M&I charges	$ 21 /AF		20,328					
51	NP-274 Tariff M&I Revenues			-					
52	CAP M&I Fees Collected		153	(76,500)					
53	AFUDC			64					
54	Balacne as of 12/31/21			1,293					
55									

ARIZONA WATER COMPANY
Test Year Ended December 31, 2014
Central Arizona Project ("CAP") Municipal & Industrial ("M&I") Fee True-up

White Tank System

Line No.	Description	[A] Projection Based on Dec. No. 68302 Cost/AF	[B] Customer Growth	[C] $ Amount	[D] Amt. Incl. in Rate Base	[E]	[F] Actual Activity AFUDC Rate	[G] Activity Thru. Dec. '10	[H]
1									
2	2022 CAP M&I charges	$ 21 /AF		20,328					
3	NP-274 Tariff M&I Revenues			-					
4	CAP M&I Fees Collected		153	(76,500)					
5	AFUDC			(2,860)					
6	Balacne as of 12/31/22			(57,739)					
7									
8	2023 CAP M&I charges	$ 21 /AF		20,328					
9	NP-274 Tariff M&I Revenues			-					
10	CAP M&I Fees Collected		153	(76,500)					
11	AFUDC			(5,936)					
12	Balacne as of 12/31/23			(119,847)					
13									
14	2024 CAP M&I charges	$ 21 /AF		20,328					
15	NP-274 Tariff M&I Revenues			-					
16	CAP M&I Fees Collected		153	(76,500)					
17	AFUDC			(9,172)					
18	Balacne as of 12/31/24			(185,191)					
19									
20	2025 CAP M&I charges	$ 21 /AF		20,328					
21	NP-274 Tariff M&I Revenues			-					
22	CAP M&I Fees Collected		153	(76,500)					
23	AFUDC			(12,577)					
24	Balacne as of 12/31/25			(253,940)					
25									
26									
27									
28									
29									
30									
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EXHIBIT JMR-5

How Low Can it Go – Declining Customer Usage

NARUC Water Committee
July 2014

Chuck Loy, Partner
Rates & Regulatory
GDS Associates, Inc.

GDS Associates, Inc.

Who We Are ...

- **Multi-service consulting and engineering firm formed in 1986.**
- **Recognized leaders in the Utility Industry.**
- **Provide Electric, Gas, Water & Wastewater Consulting Services :**

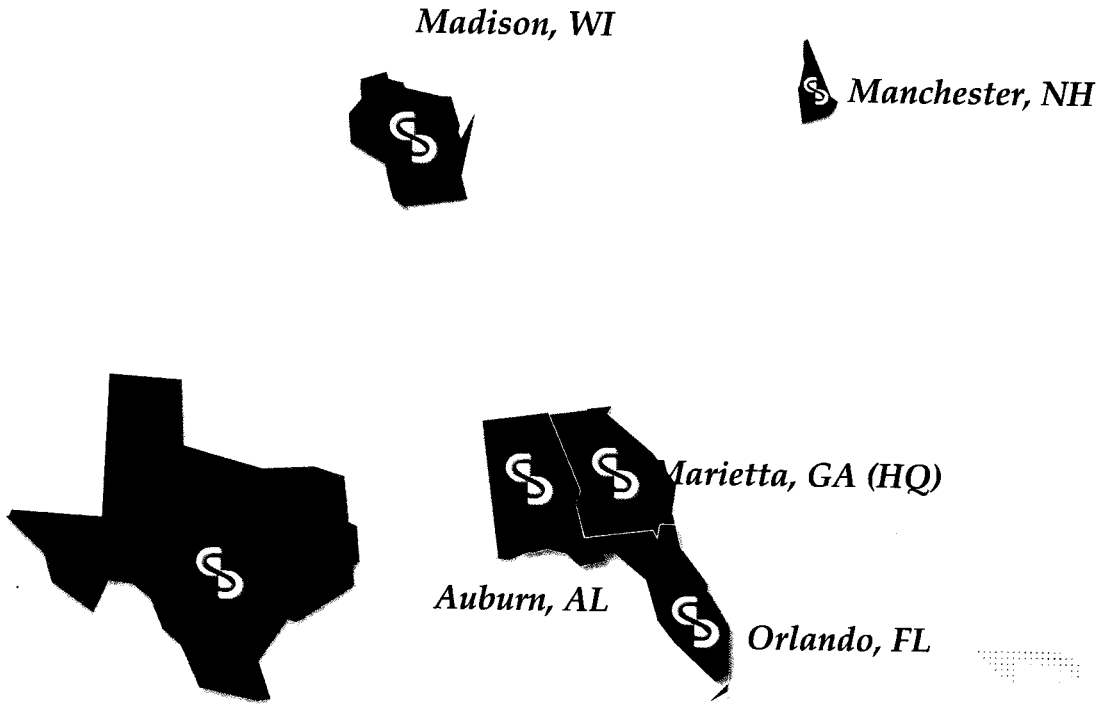
Rates & Regulatory	**Energy Supply Planning**
Energy Efficiency/DSM	**Risk Management**
Utility Privatization	**Generation/Transmission Services**
Retail Energy Procurement	**Renewable Energy Sources**
Statistics & Market Research	**Environmental Management**
NERC/ERO Compliance Services	**Electric Planning & Design**

Our Mission: To Help Our Clients Succeed By Understanding and Anticipating Their Needs and By Efficiently Delivering Quality Services With Confidence and Integrity.

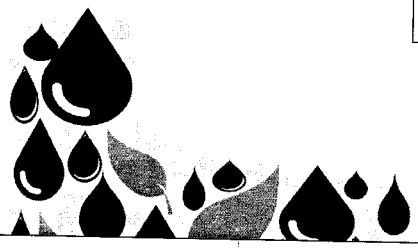
GDS Associates, Inc.
Engineers and Consultants

GDS Office Locations

Staff of more than 180 in five locations across the U.S.



Designing Water Rate Structures for Conservation & Revenue Stabilit



Changes in Water Use & Wastewater Generation and Impact Fee Implications

What We Used To Think

The Impact of Declining Demand Upon Revenue Requirements

An Overview of the "New Nor
and Water Rate Basics

Commission Watch

Baked-In or Decoupled?

Rate case risk in a climate of declining sales.

By Phillip S. Cross

A review of electric and natural gas rate cases decided over the past 12 months shows state utility regulators struggling to balance the interests

In fact, several rate cases decided during the past year and included in the following list can serve as examples of how state regulators are dealing with utility

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Declining Water Sales and Utility Revenues
A Framework for Understanding and Adapting

A White Paper for the
National Water Rates Summit
August 29-30, 2012
Racine, Wisconsin

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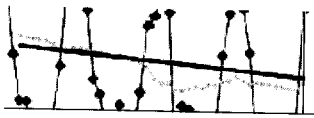

November 2006

PRICING PRACTICES IN THE ELECTRICITY SECTOR TO PROMOTE CONSERVATION AND EFFICIENCY

titudes, Perceptions, and
Water-Conserving Actions

en, Tatiana Borisova, Diane E. Boel
olen, and Robert L. Mahler

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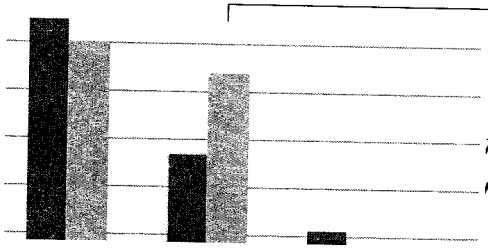
between water facts and conservation behaviors that af
rvey on attitudes and perceptions of water resources (n =
Georgia, Hawaii, Mississippi, Oklahoma, Tennessee, and Texas). The goal

North America Residential
Water Usage Trends Since 1

Defining a Resilient Business Model



r and Economic Impacts of U.S. Federal Energy
Water Conservation Standards Adopted From
1987 Through 2010

WHITE PAPER

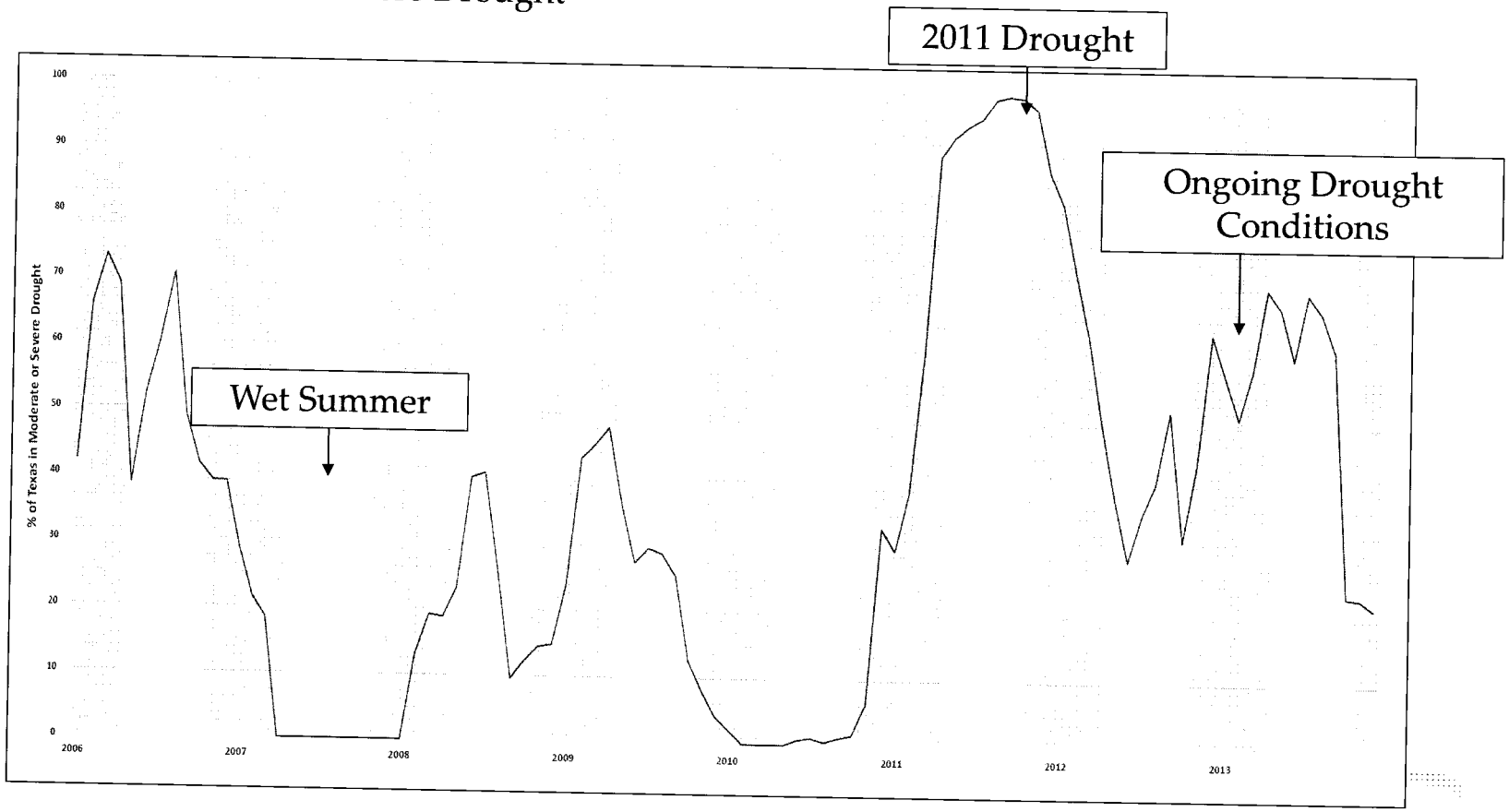
Maureen Duffy
T. 856-309-4546
maureen.duffy@amwater.com

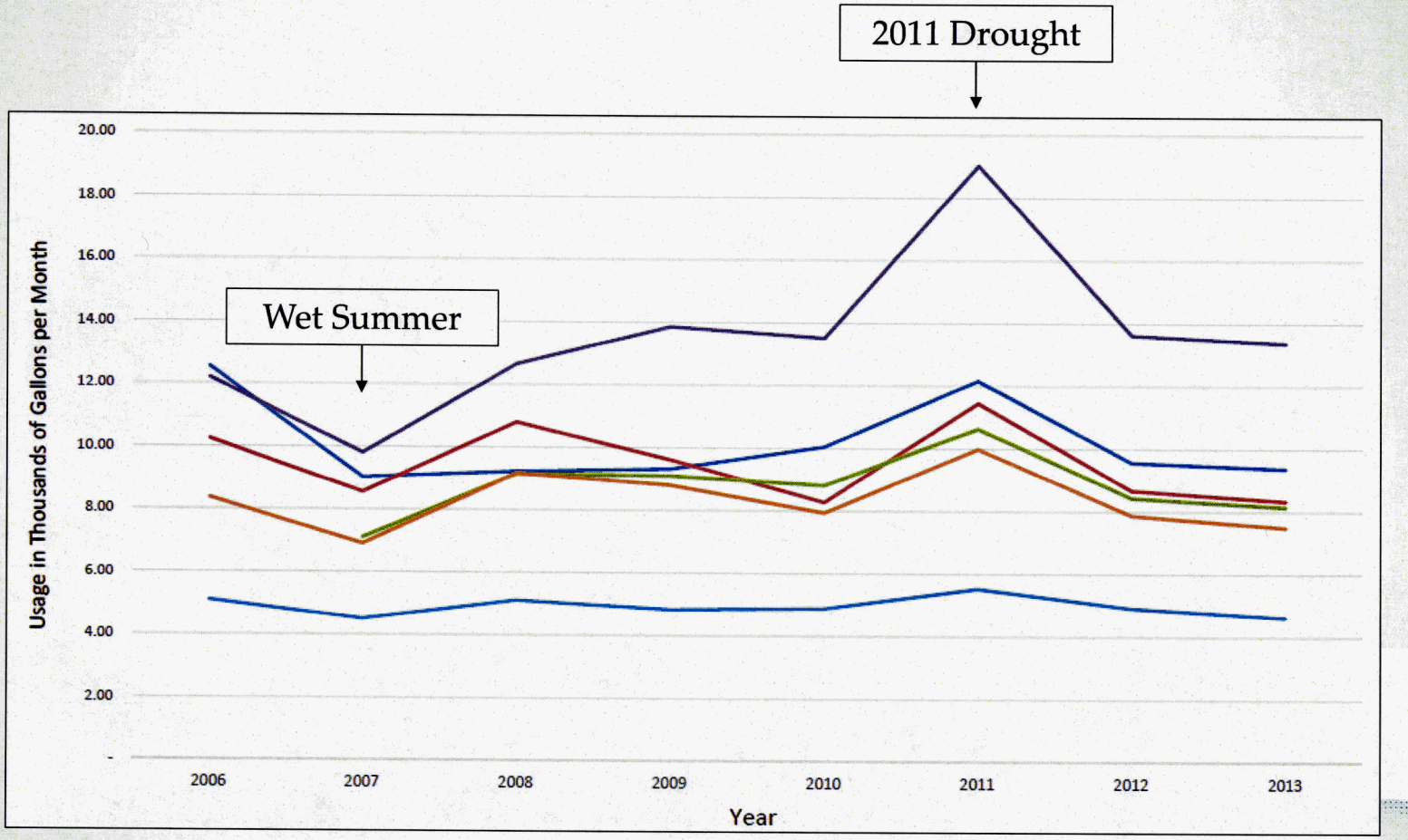
Declining Residential Water Usage

Introduction 4

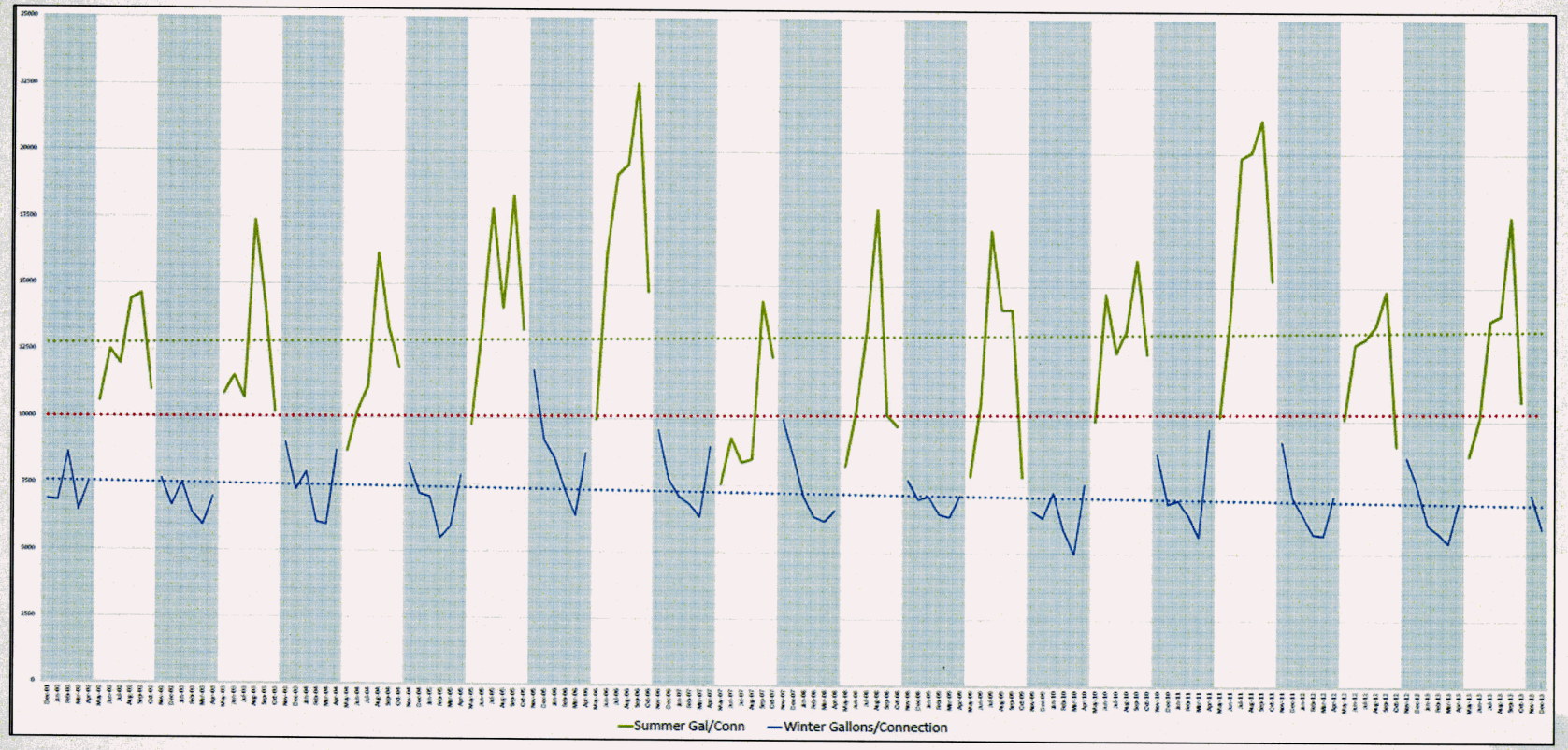
In households across the U.S., water usage is declining slowly but steadily; a trend that is expected to continue for the next 15 years or even more. This is good news in light of the

Percent of Texas in Moderate or Severe Drought

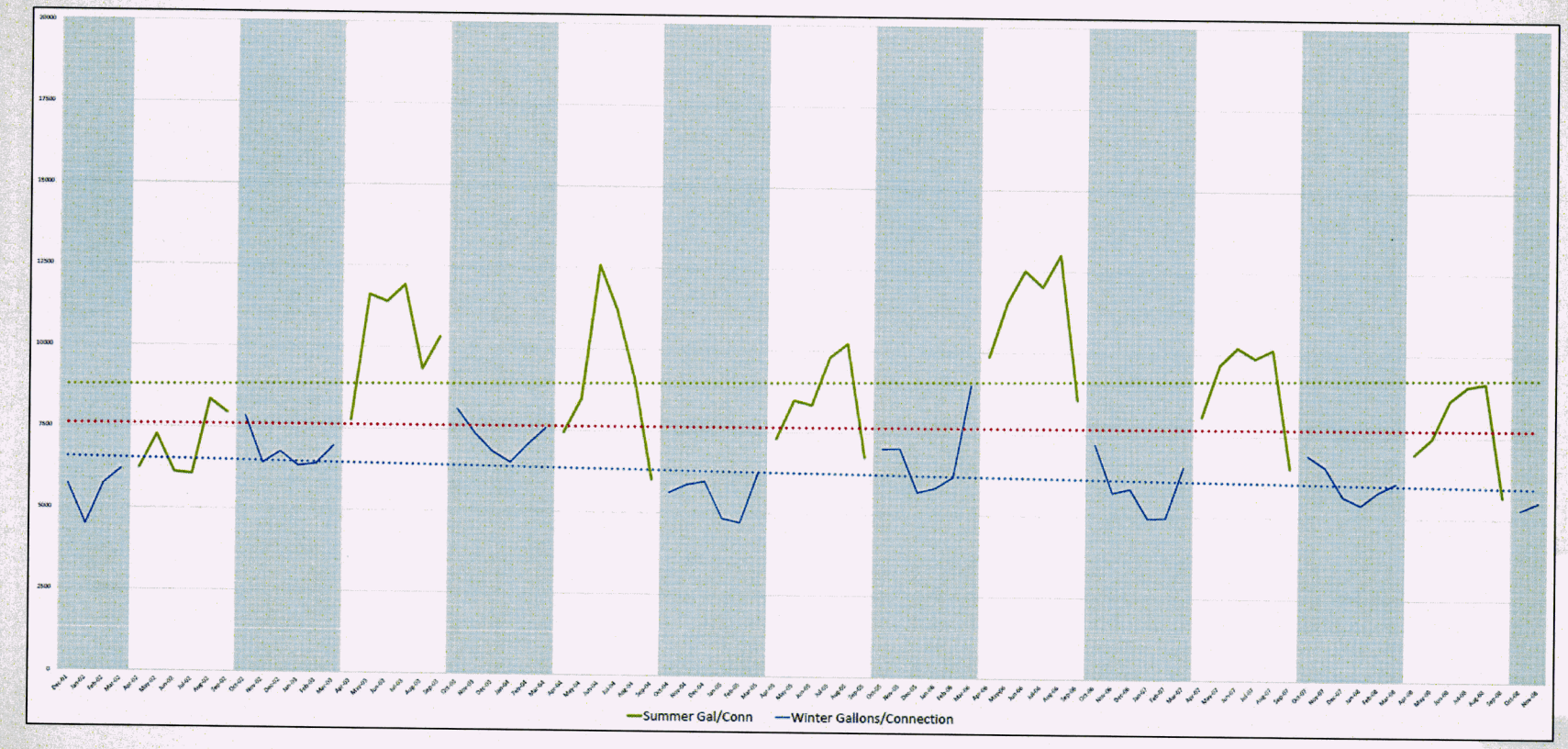




GDS Associates, Inc.
Engineers and Consultants



GDS Associates, Inc.
Engineers and Consultants



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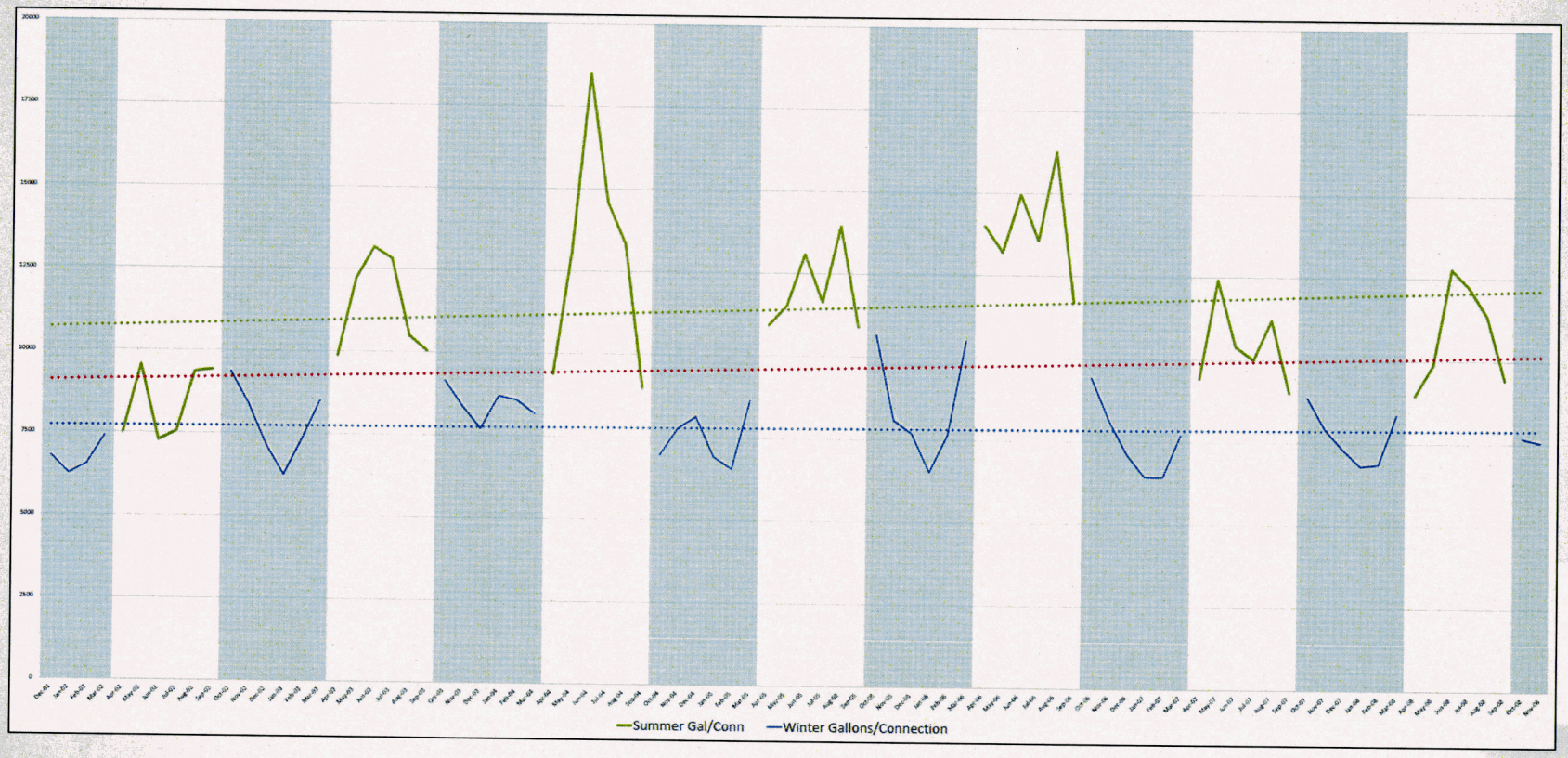

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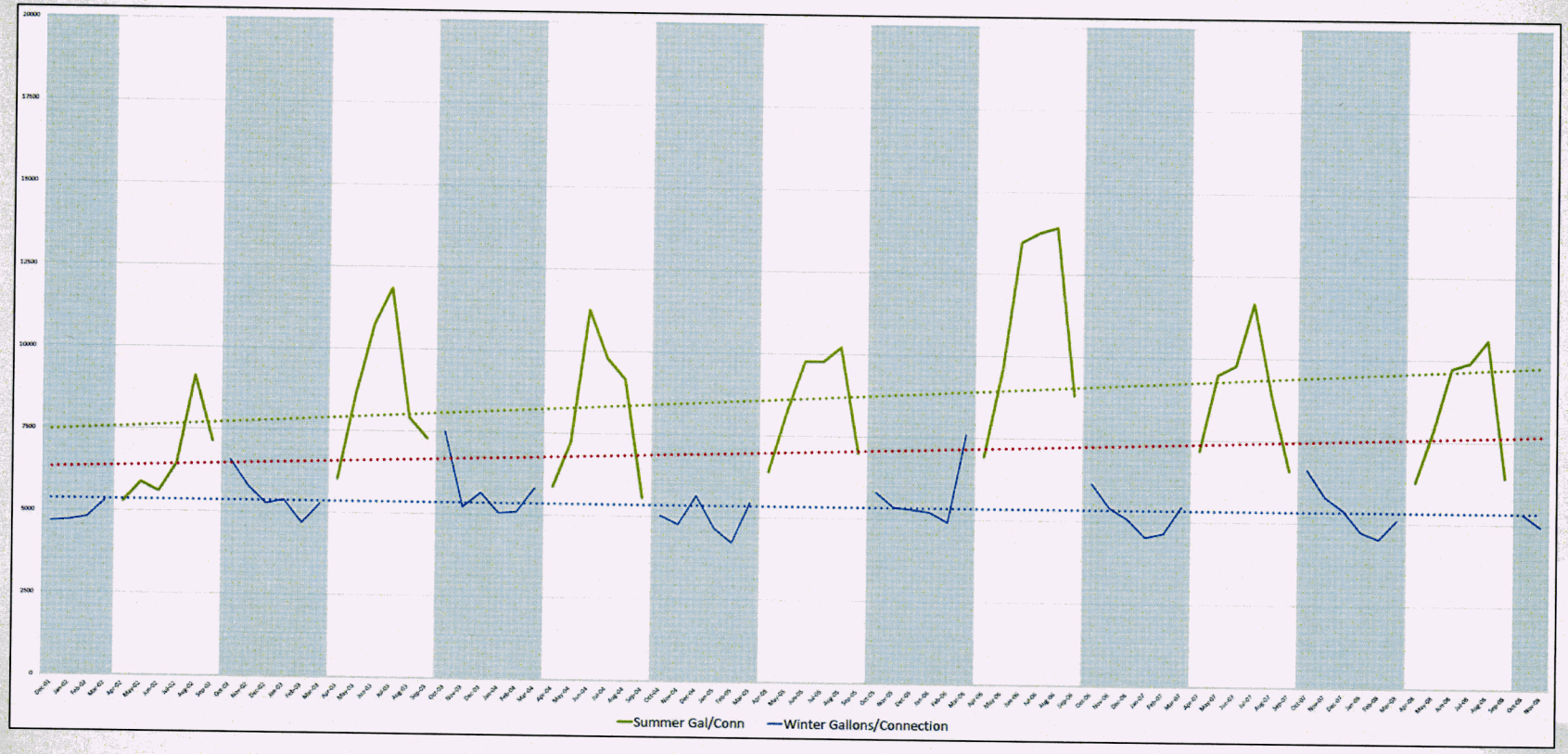

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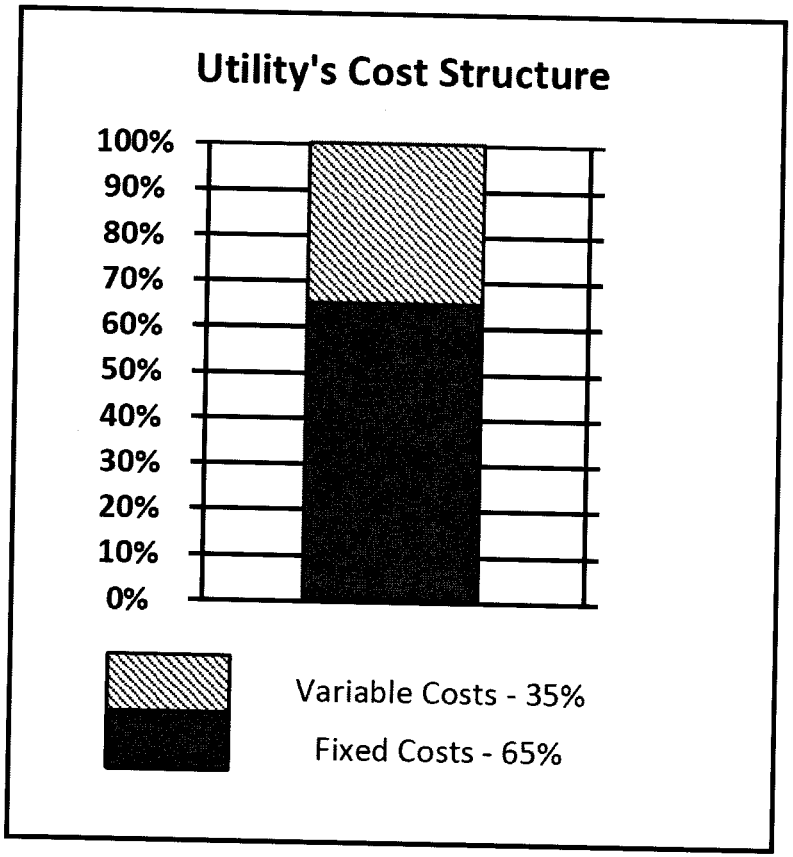
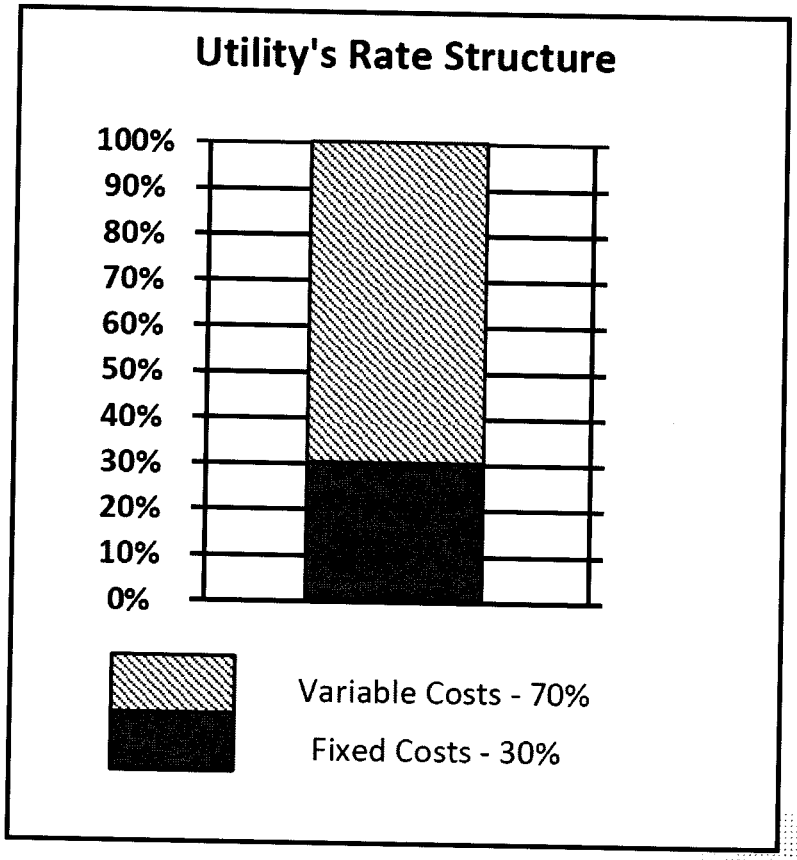
Comparison – Cost Structure v Rate Structure





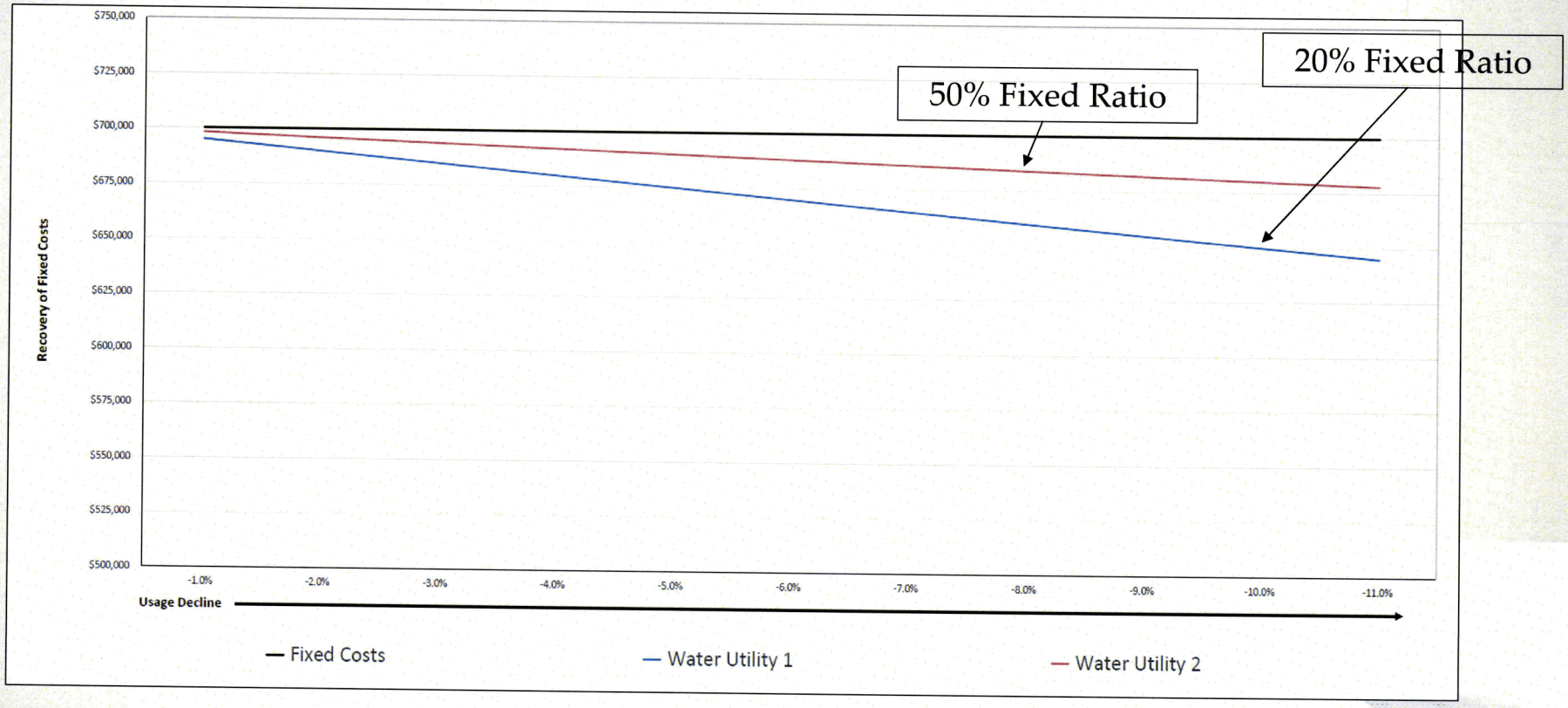
Comparison of Fixed Cost Ratios

Assume both utilities have actual cost of $700k fixed and $300k variable.

Water Utility 1 –	Water Utility 2 –
$1M Revenue Requirement	$1M Revenue Requirement
RATE DESIGN $200k Recovered by Fixed Charges $800k Recovered by Variable Charges	RATE DESIGN $500k Recovered by Fixed Charges $500k Recovered by Variable Charges

Both utilities have conservation rates with inclining block rates.

Assuming an equal demand response, Utility 1 will under collect fixed costs at a higher rate than Utility 2.



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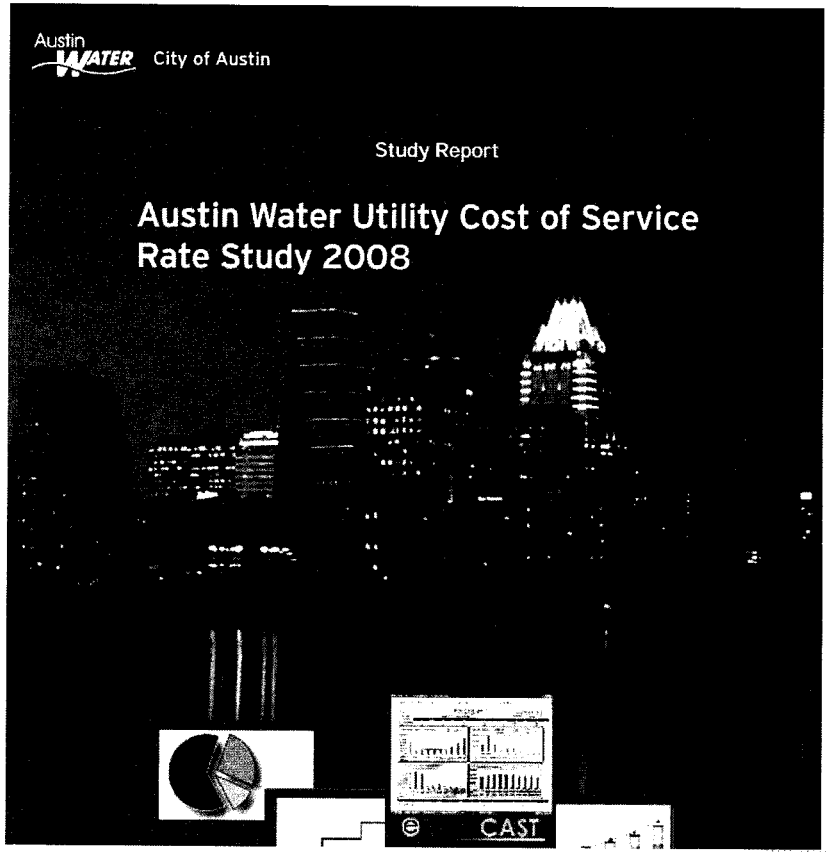
Austin Water Conservation Rate Design –Lessons Learned

Austin has been pursuing water efficiency goals since 1983.

In 2007, the city council set a goal of reducing water usage 10% over the next 10 years. One of the steps Austin took to reduce consumption was the move to an aggressive conservation rate design.



This is the 2013 revision to Austin's water rates, which still incorporates the aggressive conservation design.

WATER SERVICE RATES - RESIDENTIAL CUSTOMERS

Approved Rates
Effective November 1, 2013

Retail Monthly Meter Equivalent Minimum Charge:

Meter Size	Customer Account Charge Per Month	Equivalent Meter Charge Per Month	Fire Protection Component Per Month	Total Customer Charge Per Month
5/8	$ 4.83	$ 1.79	$ 0.48	$ 7.10
3/4	4.83	4.68	1.49	11.00
1	4.83	5.83	3.34	14.00
1 1/4	4.83	7.66	3.51	16.00
1 1/2	4.83	13.15	5.02	23.00
2	4.83	17.47	13.70	36.00
3	4.83	35.79	19.38	60.00
4	4.83	61.64	47.53	114.00
6	4.83	125.78	100.39	231.00
8	4.83	166.93	614.24	786.00
10	4.83	271.57	669.60	946.00
12	4.83	373.35	757.82	1,136.00

MONTHLY TIERED MINIMUM CHARGE:
(Based on Total Billed Volume)

Single-Family Residential	
0 - 2,000 Gallons	$ 2.00
2,001 - 6,000 Gallons	4.50
6,001 - 11,000 Gallons	7.45
11,001 - 20,000 Gallons	12.55
20,001 - over Gallons	12.55

VOLUME UNIT CHARGE: ALL VOLUMES

	UNIT RATE PER 1,000 GALLONS
Single-Family Residential	
0 - 2,000 Gallons	$ 1.84
2,001 - 6,000 Gallons	3.39
6,001 - 11,000 Gallons	6.20
11,001 - 20,000 Gallons	9.95
20,001 - over Gallons	12.84

Water Revenue Stability Reserve Fund Surcharge:

	UNIT RATE PER 1,000 GALLONS
All Volumes	$ 0.15

GDS Associates, Inc.

CITY OF AUSTIN

FOR IMMEDIATE RELEASE
Release Date: Feb. 06
Contact: Jason Hill

These Council approved recommendations aim to achieve a goal of 20% of total water revenue collected from fixed minimum charges. This will be accomplished by

AUSTIN WATER IM
WATER RATES A

Updated rate structure a

The 5 percent syst
approved by Cit
bills. The Cou
Commissio
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eliminating the current Revenue Stability Fee, and replacing it with:

- Residential volume-based tiered minimum charge
- Multifamily & Commercial meter-based fixed charge
- Large Volume fixed charge

New Residential volumetric rate block intervals are designed to better reflect residential usage patterns and further enhance water conservation.

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Professional Consultants

Austin Water Utility's Tiered Billing System

Usage Level (Gal./Month)	% of Customers	% of Consumption	% of Total Revenue
0-1,999	13%	2%	3%
2,000 - 8,999	59%	36%	27%
9,000 - 14,999	16%	22%	17%
15,000 - 24,999	9%	21%	22%
25,000+	4%	20%	30%

Source: Hard to Swallow, The Affordability of Austin's Water Utility Compared to Large Texas Cities and Austin's Suburbs, Paul Robbins February 2012

MAP

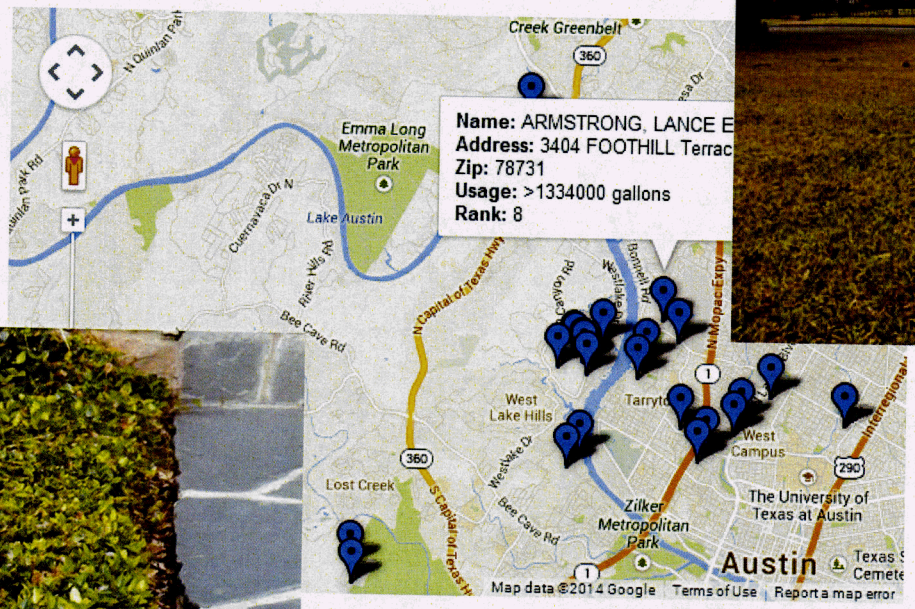
The Top 25 Water Users in Austin

OCTOBER 27, 2011 | 10:00 AM

BY TERRENCE HENRY

6 Comments Email

Tweet 46 Recommen



strong was caught. He apologized, admitted the error of his
ter in the future. His offense? Using too much water.

gallons of water in July 2008. He hadn't even been home at
foot estate. "I'm a little shocked," he **told** *The New York Times* at the time. "There's no justification for that much water. I need to fix this."

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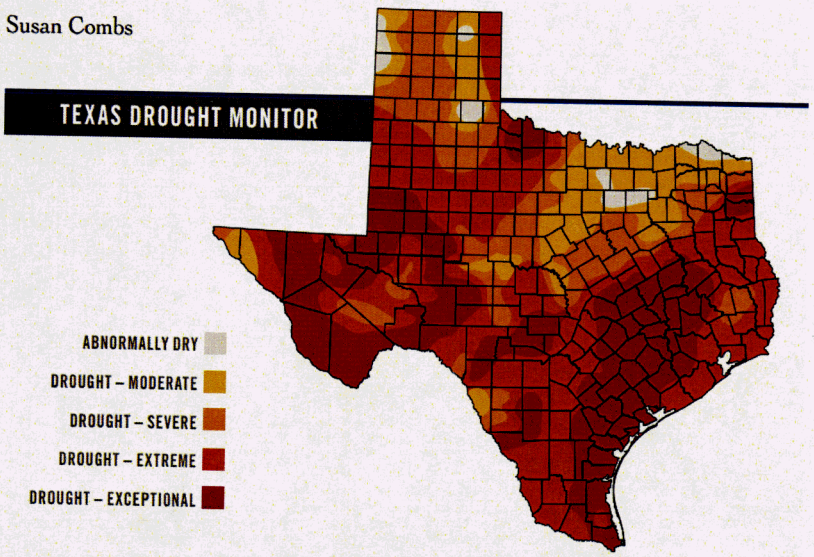
Engineers and Consultants

Doing	10
	12
	12

Susan Combs



Source: U.S. Drought Monitor, NOAA Climate Prediction Center, as of January 5, 2012

Austin Water Enacted Stage 2 Watering Restrictions on September 6

August 18, 2011

On Tuesday, September 6, Austin Water enacted Stage 2 Mandatory Watering Restrictions due to the exceptional drought in Central Texas.

Stage 2 Watering Restrictions are in line with the City's Drought Contingency Plan which states, in part, that the City Manager may order additional water restrictions when the combined lake storage levels of Lakes Travis and Buchanan reaches 900,000 acre-feet. It is anticipated that the trigger will be reached next week.

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Engineers and Consultants

Austin: Decline in water use could force rate hikes

by Marty Toohey

Austin American-Statesman
February 25, 2014 12:00 PM

Austin officials say residents have done such a good job conserving water that the city faces a conundrum: People aren't buying enough water to keep the delivery system in the black.

The Austin Water Utility took a $10 million hit in water sales for the first few months of this fiscal year, on top of the $27 million loss it logged last year. Correcting that shortfall could require new, higher "drought rates" that raise more money even as people use less water, according to the city.

Utility executives told the American-Statesman they are discussing new rate structures that could be proposed this summer. One idea is rates that rise as the lakes that supply Austin's water shrivel, a concept similar to one Dallas has adopted. Asked whether the rate increase would be double-digits, water utility director Greg Meszaros didn't rule the possibility out. To balance its books, the water utility also may deepen internal cuts.

In a sense, Austin has been a victim of its own success: Austinites have been reducing their water consumption — which means the city has collected less money from them — which is leading city officials to

Methods to Address Revenue Shortfalls

Methods Listed Used by Electric and Gas IOUs

Revenues:

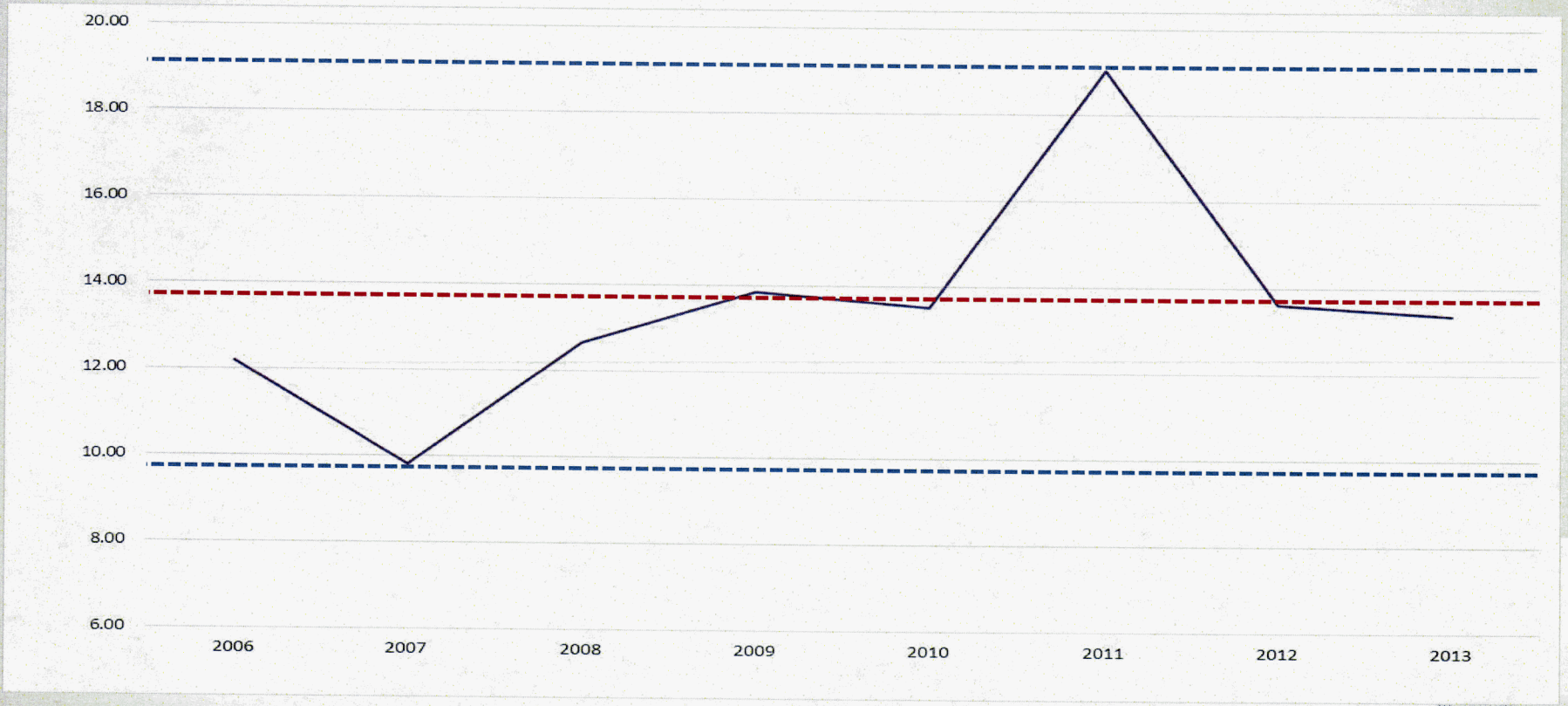
Improved Sales Forecasting/Weather Normalization

Expenses:

Cost Adjustment Mechanisms

Rate Design:

Decoupling Mechanisms
Residential Demand Rates (Three-Part Tariff)



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Sales Forecasting/Weather Normalization
(Econometric Modeling vs. Historical Averages)

Methodology used to support a recent adjustment approved by the Arizona Corporation Commission (ACC)

- Uses multiple regression analysis as the basis for developing the weather and usage decline adjustment.
- Regression analysis produces a mathematical equation, or model, that in this case estimates changes in average monthly residential usage per customer as a function of changes in weather conditions.
- Weather conditions were represented as a drought severity index that was based on levels of precipitation and temperature.
- The model provided the means for determining the weather decline impacts over a period of five years which were applied to the Historic Test Year.
- The result provides a smoothing of the historical peaks and valleys of water usage.
- Forecasts the decline in usage for upcoming 12 months

ıefit:

- Lessens the impact of volatile usage

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Uses the Statistical Modeling Available in MS Excel

MULTIPLE REGRESSION ANALYSIS USING EXPONENTIAL TREND MODEL

MONTHLY RESIDENTIAL USAGE - JANUARY 2007 THROUGH DECEMBER 2011

Navajo Residential 2007 - 2011

Regression Statistics	
Multiple R	0.982283662
R Square	0.964881192
Adjusted R Square	0.954956311
Standard Error	0.038401782
Observations	60

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	13	1.863780042	0.143367696	97.21841813	6.41809E-29
Residual	46	0.067836055	0.001474697		
Total	59	1.931616098			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept b0	0.400752508	0.018685104	21.44769983	1.36738E-25	0.363141345	0.438363672	0.363141345	0.438363672
PDSI b1	-0.005779144	0.00274989	-2.101591257	0.041095369	-0.011314386	-0.000243903	-0.011314386	-0.000243903
CodedMonth b2	-0.000757899	0.000313889	-2.414540922	0.01978983	-0.001389725	-0.000126072	-0.001389725	-0.000126072
FEB b3	-0.037755357	0.024294121	-1.554094378	0.127015789	-0.086656886	0.011146172	-0.086656886	0.011146172
MAR b4	-0.112590034	0.024317088	-4.630078826	3.00652E-05	-0.161537792	-0.063642275	-0.161537792	-0.063642275
APR b5	-0.03674255	0.024405908	-1.505477733	0.139037687	-0.085869093	0.012383993	-0.085869093	0.012383993
MAY b6	0.149784476	0.024412617	6.135535413	1.81322E-07	0.100644428	0.198924525	0.100644428	0.198924525
JUN b7	0.337781925	0.024495855	13.78935025	5.93408E-18	0.288474327	0.387089523	0.288474327	0.387089523
JUL b8	0.434714891	0.024464768	17.7690178	3.139E-22	0.385469868	0.483959913	0.385469868	0.483959913
AUG b9	0.265613064	0.024793247	10.71312114	4.34998E-14	0.215706846	0.315519282	0.215706846	0.315519282
SEP b10	0.267838536	0.024932227	10.74266413	3.97063E-14	0.217652567	0.318024504	0.217652567	0.318024504
OCT b11	0.179821602	0.025184416	7.140193332	5.61705E-09	0.129128002	0.230515203	0.129128002	0.230515203
NOV b12	0.010813794	0.025381742	0.426046157	0.672061228	-0.040277003	0.06190459	-0.040277003	0.06190459
DEC b13	-0.078128437	0.024501826	-3.188678224	0.002572141	-0.127448053	-0.028808821	-0.127448053	-0.028808821

Summary Breaks Out Weather Norm and Usage Decline Adjustments

ARIZONA WATER COMPANY

Summary - Northern Group Weather & Usage Normalization

		Weather & Usage Normalized			Weather Normalized			Usage Normalized		
	Total M Gals. Used Per Customer T.Y. 2011	Total M Gals. Used Per Customer Adjusted T.Y. 2011	Increase / (Decrease) M Gals.	Increase / (Decrease) %	Total M Gals. Used Per Customer Adjusted T.Y. 2011	Increase / (Decrease) M Gals.	Increase / (Decrease) %	Total M Gals. Used Per Customer Adjusted T.Y. 2011	Increase / (Decrease) M Gals.	Increase / (Decrease) %
Navajo	40.023	38.458	-1.564	-3.91%	39.272	-0.751	-1.88%	39.209	-0.814	-2.03%
Verde Valley	84.677	81.948	-2.729	-3.22%	84.243	-0.434	-0.51%	82.382	-2.295	-2.71%
Navajo	40.023	38.458	-1.564	-3.91%	39.272	-0.751	-1.88%	39.209	-0.814	-2.03%
Verde Valley	84.677	81.948	-2.729	-3.22%	84.243	-0.434	-0.51%	82.382	-2.295	-2.71%

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Cost Adjustment Mechanisms

- Purchased Water
- Purchased Power
- Chemicals
- Groundwater Pumping Fees (Texas)
- Property Taxes (Texas)

Benefits:

Helps rates keep in line with expenses
Improves fix cost ratio
Lessens impact of general rate cases, acts as an interim step

Residential Demand Rates

- Recent Electric Studies Indicate a Strong Correlation Between Usage and Demand
- Demand Rates Increase With Usage
- Single Block or Inclining Volumetric Rates

Benefits:

- **Better alignment of prices and costs**
- **Improved utility fixed cost recovery**
- **Built-in protection for small customers**
- **Conservation Incentive**

Residential Demand Rates

FIXED CUSTOMER COSTS

Meter	Customer Billing	Meter Costs	Total
5/8"	$5.00	$2.00	$7.00
1"	$5.00	$5.00	$10.00
1 1/2"	$5.00	$10.00	$15.00
2"	$5.00	$16.00	$21.00

SINGLE FAMILY RESIDENTAIL DEMAND RATES

Usage Tier	Rate
0 - 2,000 Gallons	$4.00
2,001 - 6,000 Gallons	$6.00
6,001 - 12,000 Gallons	$10.00
12,001 - 18,000 Gallons	$14.00
18,001 - over Gallons	$20.00

SINGLE FAMILY VOLUMETRIC RATES

Usage Tier	Rate
0 - 12,000 Gallons	$2.00
12,001 - 25,000 Gallons	$4.00
25,001 - over Gallons	$6.00

SINGLE FAMILY RESIDENTIAL BILL CALCULATIONS

Meter	Monthly Usage	Customer Costs	Demand Rate	Volume Charges	Total Fixed Costs
5/8"	2k	$7.00	$4.00	$4.00	$15.00
5/8"	12k	$7.00	$10.00	$24.00	$41.00
1"	17k	$10.00	$14.00	$44.00	$68.00
1"	27k	$10.00	$20.00	$88.00	$118.00
1"	36k	$10.00	$20.00	$142.00	$172.00

Water Revenue Adjustment Mechanism (WRAM) & Modified Cost Balancing Accounts (MCBA).

- The WRAM mechanism tracks the difference between the authorized revenue requirement and the actual revenues
- WRAM allows for aggressive inclining block (conservation) rates and allows utility to recover fixed costs
- The MCBA mechanism tracks the difference between the authorized and actual variable costs for purchased water, purchased power, and pump tax
- MCBA allows customers to benefit from reduced production costs

Benefits:

Removes conservation rate disincentive by neutralizing the financial impacts
Promotes conservation through appropriate price signals

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Conclusion/Observations

- 50% of Revenue Requirement Should be Collected Through Fixed Charges
- Investigate Residential Demand Rates
- Understand Impacts of Revenue Requirement Recovered in Tail Blocks
- Implement Revenue Normalization Adjustments Similar to Electric and Gas
- Use Cost Adjustment Mechanisms When Practical
- Consider WRAM/MCBA For Aggressive Inclining Block Rate Design

Questions

Thank you!

Chuck Loy, Partner

Chuck.Loy@gdsassociates.com

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919 Congress Avenue
Suite 800
Austin, TX 78701
512-494-0369

GDS Associates, Inc

EXHIBIT JMR-6

ARIZONA WATER COMPANY
Test Year Ended 31, 2014
Weather & Usage Normalization

Line No.		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]
		Western Group								
		Pinal Valley			White Tank			Ajo		
		Weather	Usage	Total	Weather	Usage	Total	Weather	Usage	Total
1										
2	Regression Coefficient	-0.0043	-0.0010		-0.0132	-0.0020		-0.0041	-0.0018	
3	[From Regression Output]									
4	Base-10 Antilog of Regression Coefficient	0.9902	0.9978		0.9700	0.9955		0.9907	0.9958	
5	[10 ^ Ln. 2]									
6	Estimated Weather Effect During Test Year	1.0124			1.0389			1.0271		
7	[Ln. 4 ^ Actual PDSI During T.Y.]									
8	Normalized Weather Effect	1.0184			1.0581			1.0221		
9	[Ln. 4 ^ Average PDSI During Study Period]									
10	Increase/(Decrease) in Weather Effect	0.0060			0.0191			(0.0051)		
11	[Ln. 8 - Ln. 6]									
12	% Increase/(Decrease) in Usage - Weather Normalized	0.5929%			1.8431%			-0.4932%		
13	[Ln. 10 ÷ Ln. 6]									
14										
15	Monthly Decline in Per-Customer Usage		-0.2228%			-0.4532%			-0.4219%	
16	[(Ln. 4 - 1) × 100%]									
17	Annual Decline in Per-Customer Usage									
18	[{(1 + Ln. 15) ^ 12} - 1]		-2.6416%			-5.3045%			-4.9468%	
19										
20	Total Weather & Usage Normalization Adjustment (%)									
21	[Ln. 12 + Ln. 18]			-2.0487%			-3.4614%			-5.4400%
22										
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MULTIPLE REGRESSION ANALYSIS USING EXPONENTIAL TREND MODEL

DATA USED IN MODEL:

DEPENDENT VARIABLE log(Y): log10ofResMGals (base-10 logarithm of monthly average usage per residential customer in M gallons
INDEPENDENT VARIABLE X_1: PDSI (monthly Palmer Drought Severity Index ranging from -6 to +6, with negative values denoting dry spells, from the National Climatic Data Center, U.S. Dept. of Commerce)
INDEPENDENT VARIABLE X_2: CodedMonth (coded monthly value, x_{2i} = 0, 1, 2,...)
INDEPENDENT VARIABLE M_2: FEB (categorical predictor variable for February; 1 if February, 0 if not February)
INDEPENDENT VARIABLE M_3: MAR (categorical predictor variable for March; 1 if March, 0 if not March)
INDEPENDENT VARIABLE M_4: APR (categorical predictor variable for April; 1 if April, 0 if not April)
INDEPENDENT VARIABLE M_5: MAY (categorical predictor variable for May; 1 if May, 0 if not May)
INDEPENDENT VARIABLE M_6: JUN (categorical predictor variable for June; 1 if June, 0 if not June)
INDEPENDENT VARIABLE M_7: JUL (categorical predictor variable for July; 1 if July, 0 if not July)
INDEPENDENT VARIABLE M_8: AUG (categorical predictor variable for August; 1 if August, 0 if not August)
INDEPENDENT VARIABLE M_9: SEP (categorical predictor variable for September; 1 if September, 0 if not September)
INDEPENDENT VARIABLE M_{10}: OCT (categorical predictor variable for October; 1 if October, 0 if not October)
INDEPENDENT VARIABLE M_{11}: NOV (categorical predictor variable for November; 1 if November, 0 if not November)
INDEPENDENT VARIABLE M_{12}: DEC (categorical predictor variable for December; 1 if December, 0 if not December)

FORECASTING EQUIATION:

$$\log\left(\hat{Y}_i\right) = b_0 + b_1X_1 + b_2X_2 + b_3M_2 + b_4M_3 + b_5M_4 + b_6M_5 + b_7M_6 + b_8M_7 + b_9M_8 + b_{10}M_9 + b_{11}M_{10} + b_{12}M_{11} + b_{13}M_{12}$$

where $b_0 = \text{estimate of } \log(\mathrm{B}_0) \text{ and, thus, } 10^{b_0} = \hat{\mathrm{B}}_0$

$b_1 = \text{estimate of } \log(\mathrm{B}_1) \text{ and, thus, } 10^{b_1} = \hat{\mathrm{B}}_1$

$b_2 = \text{estimate of } \log(\mathrm{B}_2) \text{ and, thus, } 10^{b_2} = \hat{\mathrm{B}}_2$

$b_3 = \text{estimate of } \log(\mathrm{B}_3) \text{ and, thus, } 10^{b_3} = \hat{\mathrm{B}}_3$

.

.

.

$b_{13} = \text{estimate of } \log(\mathrm{B}_{13}) \text{ and, thus, } 10^{b_{13}} = \hat{\mathrm{B}}_{13}$

MULTIPLE REGRESSION ANALYSIS USING EXPONENTIAL TREND MODEL

PINAL VALLEY RESIDENTIAL, JANUARY 2010 THROUGH DECEMBER 2014 (5-YEAR

Regression Statistics	
Multiple R	0.973808862
R Square	0.948303699
Adjusted R Square	0.933693875
Standard Error	0.022195641
Observations	60

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	13	0.415701112	0.031977009	64.90863149	4.26558E-25
Residual	46	0.022661738	0.000492646		
Total	59	0.43836285			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept b_0	0.890721451	0.010818554	82.33276577	1.34629E-51	0.868944832	0.91249807	0.868944832	0.91249807
PDSI b_1	-0.004282497	0.001546833	-2.768557868	0.008088467	-0.00739611	-0.001168883	-0.00739611	-0.001168883
CodedMonth b_2	-0.000968893	0.00017321	-5.593746013	1.17141E-06	-0.001317547	-0.00062024	-0.001317547	-0.00062024
FEB b_3	-0.037822375	0.014040103	-2.693881517	0.009824241	-0.066083637	-0.009561113	-0.066083637	-0.009561113
MAR b_4	-0.026668044	0.014048787	-1.898245295	0.063948379	-0.054946785	0.001610697	-0.054946785	0.001610697
APR b_5	0.052565867	0.014069999	3.736025065	0.000514823	0.02424443	0.080887305	0.02424443	0.080887305
MAY b_6	0.11580125	0.014095657	8.215385256	1.42648E-10	0.087428165	0.144174335	0.087428165	0.144174335
JUN b_7	0.185913479	0.014117343	13.16915547	3.2411E-17	0.157496742	0.214330215	0.157496742	0.214330215
JUL b_8	0.204813512	0.014138187	14.48654671	9.30356E-19	0.176354817	0.233272206	0.176354817	0.233272206
AUG b_9	0.169023273	0.014087541	11.99806811	9.12225E-16	0.140666525	0.197380022	0.140666525	0.197380022
SEP b_{10}	0.178815854	0.014114443	12.66899862	1.31966E-16	0.150404955	0.207226753	0.150404955	0.207226753
OCT b_{11}	0.114349594	0.014121746	8.097412108	2.12567E-10	0.085923995	0.142775193	0.085923995	0.142775193
NOV b_{12}	0.091115243	0.014142047	6.442860817	6.26149E-08	0.062648778	0.119581707	0.062648778	0.119581707
DEC b_{13}	0.024985626	0.01417145	1.763095981	0.084526516	-0.003540022	0.053511275	-0.003540022	0.053511275

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SIGNIFICANCE F - The associated P-value for the F-statistic. We reject the null hypothesis (H_0) that there is no linear relationship between the dependent variable and the explanatory variables if P is less than α (.05).

STANDARD ERROR - Measure of the amount of variation there is in the estimate. The smaller the standard error, the more precise (believable) the estimate is. A general rule of thumb is that the width of the 95% confidence interv is four standard deviations (plus two and minus two from the estimated average)

t-STATISTIC - The ratio of the estimate to its standard error. If the absolute value of the t-statistic is bigger than 1.98, then we reject the null hypothesis (H0) that the estimate is not statistically different from zero, and conclude that th estimate is statistically different from zero.

P-VALUE - The observed level of significance, which is the smallest level at which the null hypothesis (H0) can be rejected. Thus we reject the null hypothesis (H0) that the estimate is not statistically different from zero if P is less than α (0.05

MULTIPLE REGRESSION ANALYSIS USING EXPONENTIAL TREND MODEL

WHITE TANK RESIDENTIAL, JANUARY 2010 THROUGH DECEMBER 2014 (5-YEAR

Regression Statistics	
Multiple R	0.96601655
R Square	0.933187975
Adjusted R Square	0.914306316
Standard Error	0.033469146
Observations	60

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	13	0.719716738	0.055362826	49.42298559	1.43021E-22
Residual	46	0.051528453	0.001120184		
Total	59	0.771245192			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept b_0	1.001780651	0.016313463	61.40821676	8.6025E-46	0.968943354	1.034617948	0.968943354	1.034617948
PDSI b_1	-0.013230513	0.002332493	-5.67226181	8.94911E-07	-0.017925578	-0.008535447	-0.017925578	-0.008535447
CodedMonth b_2	-0.001972557	0.000261186	-7.552303009	1.36192E-09	-0.002498298	-0.001446817	-0.002498298	-0.001446817
FEB b_3	-0.0370748	0.021171287	-1.751183123	0.086580444	-0.079690389	0.005540789	-0.079690389	0.005540789
MAR b_4	-0.030970498	0.021184381	-1.46194963	0.150553562	-0.073612444	0.011671449	-0.073612444	0.011671449
APR b_5	0.031921569	0.021216366	1.504572903	0.139269734	-0.01078476	0.074627899	-0.01078476	0.074627899
MAY b_6	0.137987426	0.021255056	6.491981211	5.28234E-08	0.095203217	0.180771634	0.095203217	0.180771634
JUN b_7	0.215129188	0.021287757	10.10577071	2.90958E-13	0.172279157	0.257979219	0.172279157	0.257979219
JUL b_8	0.264889479	0.021319189	12.42493228	2.64855E-16	0.221976178	0.30780278	0.221976178	0.30780278
AUG b_9	0.23961164	0.021242818	11.27965408	7.71023E-15	0.196852066	0.282371215	0.196852066	0.282371215
SEP b_{10}	0.233834197	0.021283384	10.98670203	1.87664E-14	0.190992968	0.276675426	0.190992968	0.276675426
OCT b_{11}	0.168689104	0.021294396	7.921760364	3.85798E-10	0.125825708	0.211552499	0.125825708	0.211552499
NOV b_{12}	0.153037529	0.021325009	7.17643429	4.95732E-09	0.110112512	0.195962547	0.110112512	0.195962547
DEC b_{13}	0.069679609	0.021369346	3.260727296	0.002095906	0.026665348	0.112693871	0.026665348	0.112693871

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MULTIPLE REGRESSION ANALYSIS USING EXPONENTIAL TREND MODEL

AJO RESIDENTIAL, JANUARY 2010 THROUGH DECEMBER 2014 (5-YEAR

Regression Statistics	
Multiple R	0.927714859
R Square	0.860654859
Adjusted R Square	0.821274711
Standard Error	0.033571906
Observations	60

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	13	0.320218949	0.024632227	21.85504352	2.05926E-15
Residual	46	0.051845352	0.001127073		
Total	59	0.372064302			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept b_0	0.629861009	0.016278294	38.69330589	9.64708E-37	0.597094503	0.662627515	0.597094503	0.662627515
PDSI b_1	-0.004068211	0.002786974	-1.459723286	0.151162189	-0.009678098	0.001541677	-0.009678098	0.001541677
CodedMonth b_2	-0.001836093	0.00029898	-6.141183797	1.77816E-07	-0.002437909	-0.001234277	-0.002437909	-0.001234277
FEB b_3	-0.04363301	0.021234631	-2.054804232	0.045603017	-0.086376105	-0.000889915	-0.086376105	-0.000889915
MAR b_4	-0.041396401	0.02125367	-1.947729543	0.05756535	-0.084177819	0.001385017	-0.084177819	0.001385017
APR b_5	0.050144653	0.021291599	2.355138003	0.022837022	0.007286889	0.093002417	0.007286889	0.093002417
MAY b_6	0.093686659	0.021321855	4.393926248	6.49823E-05	0.050767991	0.136605326	0.050767991	0.136605326
JUN b_7	0.15393163	0.02140295	7.192075475	4.69717E-09	0.110849727	0.197013532	0.110849727	0.197013532
JUL b_8	0.155368014	0.021294361	7.296204631	3.28175E-09	0.112504689	0.198231338	0.112504689	0.198231338
AUG b_9	0.089458686	0.021336077	4.192836725	0.000123953	0.046511392	0.13240598	0.046511392	0.13240598
SEP b_{10}	0.09243199	0.021338856	4.331628284	7.94622E-05	0.049479102	0.135384878	0.049479102	0.135384878
OCT b_{11}	0.063929755	0.021356822	2.993411482	0.00442749	0.020940703	0.106918807	0.020940703	0.106918807
NOV b_{12}	-0.006202296	0.021389638	-0.289967322	0.773144359	-0.049257404	0.036852812	-0.049257404	0.036852812
DEC b_{13}	-0.017523985	0.021442529	-0.817253661	0.417996327	-0.060685557	0.025637586	-0.060685557	0.025637586

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EXHIBIT JMR-7

ORIGINAL

WATER RATES

ARIZONA WATER COMPANY		A.C.C. No.	481
Phoenix, Arizona		Cancelling A.C.C. No.	410
Filed by:	William M. Garfield	Tariff or Schedule No.	AM-253
Title:	President	Filed:	November 30, 2005
Date of Original Filing:	7-25-83	Effective:	For all service rendered on or after December 1, 2005

System: **All Services Areas EXCEPT Apache Junction, Bisbee, Sierra Vista, San Manuel, Oracle, Winkelman, Miami, Superior, Casa Grande, Coolidge, White Tank, Stanfield. Aio**

PURCHASED POWER ADJUSTMENT MECHANISM ("PPAM") TARIFF

Whenever Arizona Water Company's purchased power (electric and/or natural gas) expense in any of its water systems increases or decreases, or will increase or decrease, from the amount adopted by the Arizona Corporation Commission in the Company's last general rate proceeding for that system, the Company may, in accordance with the provisions of this PPAM, file a new schedule with the Commission for that system, setting forth an adjustment per 100 gallons designed to recover such increased or decreased purchased power expense, provided that:

1. The total amount of the increase or decrease in the purchased power expense will be calculated by comparing the Company's normalized cost for power during the test year utilized in its last general rate case with the Company's normalized cost of power for that test year computed at the Company's new increased or decreased cost for power.

2. The total change in power cost will be divided by the total gallonage pumped during the test year to determine the adjusted increase or decrease per 100 gallons.

3. The calculated increase or decrease in rates for the system must amount to at least $0.001 per 100 gallons (rounded up or down from five) before an adjustment can be made.

4. All revised schedules filed with the Arizona Corporation Commission pursuant to the provisions of this PPAM will be accompanied by workpapers prepared by the Company in a format approved by the Utilities Division Staff of the Commission and will be in sufficient detail to enable the Commission to test the accuracy of the Company's calculations.

5. The new schedules filed by the Company under the provisions of this PPAM will become effective either on the date the schedules are approved for filing, if the purchased power expense has already increased, or decreased, or on the date the increased or decreased purchased power expense becomes effective, if it has not yet changed.

6. Illustration of application of the above PPAM, assuming the following test year data:

A) 4,000,000 H Gallons Pumped
B) 3,300,000 H Gallons Sold (82.5%)
C) 700,000 H Gallons Unaccounted For (17.5%)
D) $100,000 Purchased Power Expense
E) 1,250,000 KWH

Should Purchased Power Rates increase at a future date such that the new Power Rates x (E) = $125,000, a Purchased Power Expense pass thru calculation would be initiated.

Pass Thru Calculation Steps:

APPROVED FOR FILING
DECISION #: 68302

1) $125,000 - $100,000 = $25,000 Total Purchased Power Increase
2) $25,000 ÷ 4,000,000 H Gallons Pumped = $0.00625/H Gallon
3) Step (2) Rounded Per Provisions of Tariff = $0.006/H Gallon
4) $0.006/H Gallon x Actual Gallons Used Including Gallons In Minimum = PPAM Charge on Bill

ARIZONA WATER COMPANY

Arizona Corporation Commission

Docket No. W-01445A-15-0277

2015

WESTERN GROUP

RATE HEARING

Direct Testimony

of

Pauline M. Ahern, CRRA

EXHIBIT

A-7

admitted 5-12-16

TABLE OF CONTENTS

I. Introduction 4
II. Summary 6
III. General Comments On Capital Market Conditions 8
IV. General Principles 13
V. Financial Risk 22
VI. Arizona Water Company's Western Group 23
VII. Proxy Group 24
VIII. Common Equity Cost Rate Models 25
A. Discounted Cash Flow Model ("DCF") 26
B. The Risk Premium Model ("RPM") 28
C. The Capital Asset Pricing Model ("CAPM") 37
IX. Conclusion of Common Equity Cost Rate 41
A. Credit Risk Adjustment 42
B. Business Risk Adjustment 44

APPENDIX & EXHIBITS

Professional Qualifications of Pauline M. Ahern ..... Appendix A
Summary of Cost of Capital and Fair Rate of Return PMA-1
Capital Intensity and Depreciation Rates for Arizona Water Company and the AUS Utility Reports Companies PMA-2
Financial Profile of Arizona Water Company PMA-3
Financial Profile of the Proxy Group of Eight Publicly Traded Water Companies .. PMA-4
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model ("DCF") PMA-5
Current Institutional Holdings PMA-6
Indicated Common Equity Cost Rate Using the Risk Premium Model ("RPM") PMA-7
Indicated Common Equity Cost Rate Using the Capital Asset Pricing Model ("CAPM") PMA-8
Standard & Poor's Cash Flow / Leverage Analysis Ratios PMA-9

EXECUTIVE SUMMARY

The direct testimony of Pauline M. Ahern addresses the following issues:

Arizona Water Company's Cost of Common Equity and Overall Required Rate of Return – Ms. Ahern concludes that Arizona Water Company's ("AWC" or "Company") cost of equity is 10.75% and its overall required rate of return is 8.93%. The overall required rate of return is based upon AWC's actual capital structure consisting of 46.31% long-term debt and 53.69% common equity.

Ms. Ahern's cost of equity recommendation is based on the results of her discounted cash flow ("DCF"), risk premium ("RPM") and capital asset pricing model ("CAPM") analyses applied to a proxy group of eight publicly traded water companies. Ms. Ahern concludes that the average cost of common equity to the proxy group is 9.60%, before any adjustment to reflect AWC's relative credit and business risks. In her opinion, if rated, AWC's bonds would likely be rated Baa2 by Moody's, compared with the average Moody's bond rating of A2/A3 for the proxy group, thus requiring a 0.63% credit risk premium. Further, based upon empirical evidence, AWC's smaller size relative to the proxy group requires a 0.50% business risk premium. Adding the required credit risk adjustment of 0.63%, coupled with the required business risk adjustment of 0.50%, to the 9.60% indicated cost of common equity to the proxy group, results in a cost of common equity of 10.73% to AWC. When rounded, Ms. Ahern's recommended cost of common equity for AWC is 10.75%.

ARIZONA WATER COMPANY

Direct Testimony of

Pauline M. Ahern

I. Introduction

Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.

A. My name is Pauline M. Ahern. I am a Partner with Sussex Economic Advisors, LLC. My business address is 161 Worcester Road, Suite 503, Framingham, MA 01701. My mailing address is 3000 Atrium Way, Suite 241, Mount Laurel, NJ 08054.

Q. PLEASE SUMMARIZE YOUR PROFESSIONAL EXPERIENCE AND EDUCATIONAL BACKGROUND.

A. I have offered expert testimony on behalf of investor-owned utilities before twenty-nine state regulatory commissions in the United States as well as one provincial regulatory commission in Canada on rate of return issues, including but not limited to common equity cost rate, fair rate of return, capital structure issues, relative investment risk and credit quality issues. I am a graduate of Clark University, Worcester, MA, where I received a Bachelor of Arts degree with honors in Economics. I have also received a Master of Business Administration with high honors and a concentration in finance from Rutgers University.

On behalf of the American Gas Association ("A.G.A."), I calculate the A.G.A. Gas Index, which serves as the benchmark against which the performance of the American Gas Index Fund ("AGIF") is measured monthly. The A.G.A. Gas Index and AGIF are a market capitalization weighted index and mutual fund, respectively, comprised of the common stocks of the publicly traded corporate members of the A.G.A.

I am a member of the Society of Utility and Regulatory Financial Analysts ("SURFA") where I serve on its Board of Directors, having served two terms as

President, from 2006 – 2008 and 2008 – 2010. Previously, I held the position of Secretary/Treasurer from 2004 – 2006. In 1992, I was awarded the professional designation "Certified Rate of Return Analyst" ("CRRA") by SURFA, which is based upon education, experience and the successful completion of a comprehensive written examination.

I am also an associate member of the National Association of Water Companies, serving on its Finance/Accounting/Taxation and Rates and Regulation Committees; a member of the Advisory Council of the Financial Research Institute – University of Missouri – Robert J. Trulaske, Sr. College of Business; a member of the American Finance and Financial Management Associations; a member of Edison Electric Institute's Cost of Capital Working Group; and a member of A.G.A.'s State Affairs Committee.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony addresses the overall fair rate of return, including the appropriate investor-required return on common equity, which Arizona Water Company ("AWC" or "Company") should be afforded the opportunity to earn on the fair value rate base of its Western Group.

Q. WHAT IS YOUR RECOMMENDED COMMON EQUITY COST RATE?

A. I recommend that the Arizona Corporation Commission ("ACC" or "the Commission") authorize the Company the opportunity to earn an overall rate of return of 8.93%, including a common equity cost rate of 10.75%, on its Western Group fair value rate base. A common equity cost rate of 10.75% results in an overall rate of return of 8.93% when applied to a common equity ratio of 53.69% at December 31, 2014, shown on Schedule D-1 of the Company's application, as summarized in Table 1 below:

Table 1

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	46.31%	6.82%	3.16%
Common Equity	53.69%	10.75%	5.77%
Total	100.00%		8.93%

Q. HAVE YOU PREPARED EXHIBITS THAT SUPPORT YOUR RECOMMENDED COMMON EQUITY COST RATE?

A. Yes. They are Exhibits PMA-1 through PMA-9.

II. Summary

Q. PLEASE SUMMARIZE YOUR RECOMMENDED COMMON EQUITY COST RATE.

A. My recommended common equity cost rate of 10.75% is summarized on page 2 of Exhibit PMA-1. Because AWC's common stock is not publicly traded, a market-based common equity cost rate cannot be directly observed for the Company. Consequently, I have assessed the market-based common equity cost rates of companies of relatively similar, but not necessarily identical risk, i.e., a proxy group, for insight into a recommended common equity cost rate applicable to AWC. Using companies of relatively similar risk as proxies is consistent with the principle of fair rate of return established in the *Hope*[1] and *Bluefield*[2] cases, adding reliability to the informed expert judgment necessary to arrive at a recommended common equity cost rate. However, because no proxy is identical in risk to AWC, the proxy group's results must be adjusted, as necessary, to reflect the unique relative investment (financial and / or business) risk of the Company.

---

[1] *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

[2] *Bluefield Water Works Improvement Co. v. Public Serv. Comm'n*, 262 U.S. 679 (1922).

My recommendation results from the application of market-based cost of common equity models, the Discounted Cash Flow ("DCF") approach, the Risk Premium Model ("RPM") and the Capital Asset Pricing Model ("CAPM"), to the market data of the proxy group of eight publicly traded water companies whose selection will be discussed below.

The results derived from each are as follows:

Table 2

	Proxy Group of Water Companies
Discounted Cash Flow Model	8.64%
Risk Premium Model	10.76
Capital Asset Pricing Model	9.58
Indicated Common Equity Cost Rate	9.60%
Credit Risk Adjustment	0.63
Business Risk Adjustment	0.50%
Indicated Common Equity Cost Rate	10.73%
Recommended Common Equity Cost Rate	10.75%

After reviewing the cost rates based upon these models, I conclude that a common equity cost rate of 9.60% is indicated before any adjustment for credit and business risks arising from AWC's likely Moody's bond rating in the Baa2 rating category and greater unique business risks relative to the proxy group of eight publicly traded water companies, as discussed in more detail below and in the direct testimony of Mr. Garfield. Thus, the indicated common equity cost rate based upon the eight publicly traded water companies needs to be adjusted upward by 0.63% for credit risk and 0.50% to reflect AWC's increased unique business risk, as noted above. The details of these adjustments will be discussed below. After adjustment, the indicated credit and business risk-adjusted common equity cost rate is 10.73%, which when rounded to 10.75%, is my recommended common equity cost rate and in my opinion, is reasonable, if not conservative.

III. General Comments On Capital Market Conditions

Q. PLEASE DESCRIBE CURRENT CAPITAL MARKET CONDITIONS.

A. The U.S. economy is slowly recovering from the Great Recession of 2008 – 2009, with the Federal Reserve Bank's ("Fed") Federal Open Market Committee ("FOMC") having tapered off and ended its quantitative easing[3] while maintaining the Federal Funds ("Fed Funds") rate and discount rate at record lows until certain economic thresholds are met and maintained for an undefined period. As a result, the stock market has recovered remarkably, with the Dow Jones Industrial Average ("DOW") up approximately 175% from the lows of early March 2009, notwithstanding the DOW's recent volatility.

In its June 12, 2015, Selection & Opinion, *Value Line Investment Survey ("Value Line")* notes that the economy has some catching up to do as it moves into mid-2015. However, *Value Line* notes that positive trends will continue relative to Gross Domestic Product ("GDP") and the strong U.S. dollar despite

[3] Purchase of mortgage backed securities.

the challenge facing the Fed to achieve a soft monetary landing after years of record low interest rates.[4]

The cost of capital, including the cost of common equity, is expectational in nature. So, expected interest rates are relevant to rate of return analyses, the current historically low interest rates are not. As noted by *Value Line* below, interest rates are expected to rise, and it is a matter of when, not if. On May 22, 2015, *Value Line* published its Quarterly Forecast for the U.S. Economy in its Selection & Opinion. *Value Line* projects interest rates to rise significantly by 2019. Specifically, the yield on the 3-month Treasury Bills is expected to rise from 0.01%[5] (June 3, 2015) to 3.5% in 2019[6]. *Value Line* expects the yield on long-term U.S. Treasury securities to rise from 3.10% (June 3, 2015) to 4.5% in 2019, and the prime rate to rise from 3.25% (June 3, 2015) to 6.0% in 2019.

In fact, the yield on 30-year U.S. Treasury securities has already risen 53 basis points (0.53%) during the last three months, from its February average of 2.57%, as shown on page 9 of Exhibit PMA-7, to the 3.10% noted above. Likewise, as shown on page 4 of Exhibit PMA-7, the average yield on Moody's A-rated public utility bonds has risen 43 basis points (0.43%), from its March 2015 average of 3.74% to 4.17% in May 2015. As noted below, the Fed considers recent levels of interest rates as below the longer-term "normal."

Clearly, the capital markets are reflecting both the recent historically low interest rate environment engineered by the Fed plus an expectation of rising interest rates. The Fed's engineering of interest rates impacts the measurement of the cost of capital, specifically the investor required return on common equity.

Q. HOW DOES THE FED'S ENGINEERING OF INTEREST RATES AFFECT THE TRADITIONAL COST OF COMMON EQUITY MODELS?

A. The traditional cost of common equity models (e.g., the DCF, RPM, and CAPM)

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4 *Value Line Investment Survey*, Selection & Opinion, June 12, 2015, 4173.
5 *Value Line*, June 12, 2015, 4181.
6 *Value Line Investment Survey*, Selection & Opinion, May 22, 2015, 4211.

do not accurately or reliably capture the investors' required return under current economic and capital market conditions, which include artificially and historically low interest rates. The fact that such low interest rates are below the long-run "norm" is corroborated by the FOMC's own statements in the press release it issued following its latest meeting on April 28 - 29, 2015[7]. In that press release the FOMC stated that "The Committee anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term". . . and "economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run." Clearly, the FOMC anticipates that it will raise the target range for the federal funds rate. Again, it is a matter of when, not if.

The likelihood that the Fed will raise interest rates sooner rather than later is corroborated by the Vice Chair of the Fed, Stanley Fischer, who stated in an interview with CNBC on April 16, 2015[8]:

> We expect that the markets look ahead somewhat, so I think – I hope – that they are taking into account that the Fed, at some point, is likely to raise the interest rate, [markets] can't depend on the current situation continuing forever – or even probably – *beyond the end of this year. [Emphasis added]*

In fact, Fed chairwoman Janet Yellen said on May 22, 2015[9], "that she expects the central bank to begin raising interest rates later this year as the economy continues to improve over the coming months." In addition, Globe Staff & Wire Services also reports that "Earlier, economists predicted the first increase would come in June, but following a slowdown over the winter, many now

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7 Board of Governors of the Federal Reserve System, Press Release, April 29, 2015.
8 "Fed's Fischer: Economy in A1 was 'poor,' but rebound coming," www.cnbc.com/id/102589051
9 Globe Staff and Wire Services, May 22, 2015

forecast that a rate hike will not happen before September." Paul Ashworth, chief US economist at Capital Economics was quoted as saying that, "Assuming that economic growth does rebound, we don't think the Fed can wait any longer than September."

These artificially low interest rates have led some analysts to the faulty conclusion that current capital costs are low and will continue to be so. These analysts are mistaken. Their conclusion only holds true under the hypothesis of Perfectly Competitive Capital Markets ("PCCM") and the classical valuation framework which, under normal economic conditions, underpins the traditional cost of common equity models. PCCM are capital markets where no single trader, known as a "market-mover", would have the power to change the prices of goods or services, including bond and common stock securities. In other words, under the PCCM hypothesis, no single trader would have a significant impact on market prices. Classic valuation theory means that investors would trade securities rationally with prices reflecting their perceptions of value. However, although the Fed has always had the ability to set the Fed Funds and discount rates, it has been maintaining below normal rates to stimulate continued economic and capital market recovery. Thus, it is logical to conclude that the Fed is acting as that market-mover, which has a significant impact on the market prices of both bonds and stocks. The presence of a market-mover like the Fed in the current capital markets invalidates the PCCM, which is the foundation of the traditional cost of common equity models. This is corroborated by Michael K. Farr of CNBC, who stated[10]:

> It seems like an eternity since the markets have behaved 'normally.' For at least the past 6 – 7 years, there has been a wholly different driver of supply and demand in the stock market. Market peaks and valleys have been clearly and unambiguously correlated to the various pronouncements of monetary support by the Federal

[10] Michael K. Farr, President, Farr, Miller & Washington, LLC, "Goldilocks lives! Time for Fed to stand down", www.cnbc.com/id/101888234 August 5, 2015.

> Reserve. The financial market distortions created by the Fed will have a lasting impact on the economy for years to come." (emphasis added)

In addition, relative to an April 15, 2015 interview with CNBC's "Squawk Box", former U.S. Treasury Secretary Hank Paulson, noted[11]:

> ... that stocks and other assets need to start to trade again on "real economic[s]," arguing the Federal Reserve should hike interest rates sooner rather than later.
>
> * * *
>
> He acknowledged the "disortational [sic] effects" of the Fed's easy money policies, which have benefited investors by pumping up assets, while hurting savers and Americans on fixed incomes.

In such a capital market, it is more important than ever to use projected data, including interest rates, growth rates and equity risk premiums, as well as multiple cost of common equity models, which will enhance the exercise of the informed expert judgment required of a rate of return analyst. It is also important to note that, due to the low interest rate environment, coupled with the Fed acting as a market-mover, the traditional cost of common equity models (DCF, RPM and CAPM) will have a tendency to understate the investor required cost of common equity. Consesequently, the results of these cost of common equity models, including those presented in this analysis, are particularly conservative estimates (i.e. on the low side) of the investor required rate of return on common equity. In my opinion, the results of traditional cost of common equity models[12] should be viewed with even greater scrutiny under current economic and capital market conditions.

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[11] "I worry about Fed-induced asset bubbles: Paulson," www.cnbc.com/id/102588168.

[12] Discounted Cash Flow, Risk Premium and Capital Asset Pricing Models.

IV. General Principles

Q. WHAT GENERAL PRINCIPLES HAVE YOU CONSIDERED IN ARRIVING AT YOUR RECOMMENDED COMMON EQUITY COST RATE OF 10.75%?

A. In unregulated industries, the competition of the marketplace is the principal determinant of the price of products or services. For regulated public utilities, regulation must act as a substitute for marketplace competition. Assuring that the utility can fulfill its obligation to provide safe and reliable service at all times requires a level of earnings sufficient to maintain the integrity of presently invested capital, as well as permitting the attraction of needed new capital at a reasonable cost in competition with other firms of comparable risk. This is consistent with the fair rate of return standards established by the U.S. Supreme Court in the *Hope* and *Bluefield* cases. Consequently, marketplace data must be relied upon in assessing a common equity cost rate appropriate for ratemaking purposes. Therefore, my recommended common equity cost rate is based upon marketplace data of a proxy group of utilities as similar in risk as possible to AWC, based upon selection criteria discussed below. The use of the market data of a proxy group adds reliability to the informed expert judgment that is required in arriving at a recommended common equity cost rate. Likewise, the use of multiple common equity cost rate models adds reliability when arriving at a recommended common equity cost rate.

V. Business Risk

Q. PLEASE DEFINE BUSINESS RISK AND EXPLAIN WHY IT IS IMPORTANT TO THE DETERMINATION OF A FAIR RATE OF RETURN.

A. Business risk is important to the determination of a fair rate of return because the greater the level of risk, the greater the rate of return investors demand, consistent with the basic financial principle of risk and return. Business risk is the riskiness of a company's common stock without the use of debt and/or preferred capital. Examples of the general business risks faced by all utilities (i.e., electric,

natural gas distribution and water utilities) include, but are not limited to, the quality of management, the regulatory environment, customer mix and concentration of customers, service territory economic growth, capital intensity and size, all of which have a direct bearing on earnings. An individual utility may face different levels of one or more particular business risks.

Q. WHAT BUSINESS RISKS DOES THE WATER UTILITY INDUSTRY IN GENERAL FACE TODAY?

A. Water is essential to life and unlike electricity or natural gas, water is the only utility product which is intended for customers to ingest. Consequently, water quality is of paramount importance to the health and well-being of customers and is therefore subject to additional and increasingly stringent health and safety regulations. Beyond health and safety concerns, water utility customers also have significant aesthetic concerns regarding the water delivered to them, with regulators paying close attention to these concerns because of the strong feelings they evoke in consumers. Also, unlike many electric and natural gas utilities, water utilities serve a production and treatment function in addition to the delivery functions served by electric and gas utilities.

Water utilities obtain supply from wells, aquifers, surface water reservoirs or streams and rivers. Throughout the years, well supplies and aquifers have been environmentally threatened, with historically minor purification treatment giving way to major well rehabilitation, extensive treatment or replacement. Simultaneously, Safe Drinking Water Act ("SDWA") quality standards have tightened considerably, requiring multiple treatments prior to water delivery. Supply availability is also limited by drought, water source overuse, runoff, threatened species and habitat protection, and other operational, political and environmental factors. In addition, the United States Environmental Protection Agency ("EPA"), as well as individual state and local environmental agencies, are continually monitoring potential contaminants in the water supply and

promulgating or expanding regulations when necessary. Increasingly stringent environmental standards necessitate additional capital investment in the distribution and treatment of water, exacerbating the pressure on water utilities' free cash flows through increased capital expenditures for infrastructure, repair and replacement. In the course of procuring water supplies and treating water so that it complies with SDWA standards, water utilities have an ever-increasing responsibility to be stewards of the environment from which supplies are drawn, in order to preserve and protect essential natural resources of the United States.

Water utilities are typically vertically engaged in the entire process of acquisition, supply, production, treatment and distribution of water. In contrast, electric and natural gas companies, where transmission and distribution is generally separate from generation, do not produce the electricity or natural gas which they transmit and distribute. Hence, water utilities require significant capital investment not only in distribution and transmission systems but also in sources of supply (surface and groundwater), production (wells), and storage. Significant capital investment is necessary both to serve additional customers and to replace aging systems, creating a major risk facing the water utility industry.

Value Line Investment Survey ("*Value Line*")[13] observes the following about the water utility industry:

> The water infrastructure in the United States is in need of a major overhaul. Capital improvements have been deferred by just about every water system for years, if not decades. Large sums of money will be required to remove and replace old pipeline distribution systems.
>
> * * * *
>
> To finance the projected capital outlays, water utilities will be forced to issue new debt and equity. Currently, most of these companies

[13] *Value Line Investment Survey*, April 17, 2015 p 1781.

> have decent balance sheets. . . . Over the next three- to five-year period, we expect the financial metrics of the industry to decline somewhat. Still, there doesn't appear to be any one utility that is expected to become highly leveraged during this period.

In addition, because the water utility industry is more capital-intensive than the electric, combination electric and gas, or natural gas utilities, the investment required to produce a dollar of revenue is greater. For example, as shown on page 1 of Exhibit PMA-2, it took $3.95 of net utility plant on average to produce $1.00 in operating revenues in 2014 for the water utility industry as a whole. For AWC specifically, it took a much greater $5.06 of net utility plant to produce $1.00 in operating revenues in 2014. In contrast, for the electric, combination electric and gas, and natural gas utility industries, on average it took only $2.65, $2.18 and $1.69, respectively, to produce $1.00 in operating revenues in 2014. As financing needs have increased and will continue to increase, the competition for capital from traditional sources has increased and will also continue to increase, making the need to maintain financial integrity and the ability to attract needed new capital increasingly important.

Q. WHY IS THERE AN INCREASED NEED FOR FINANCING?

A. There are a number of challenges facing the water utility industry. The National Association of Regulatory Utility Commissioners ("NARUC") has highlighted the challenges facing the water utility industry stemming from its capital intensity. NARUC's Board of Directors adopted the following resolution in July 2013.[14]

> WHEREAS, There is both a constitutional basis and judicial precedent allowing investor owned public water and wastewater utilities the opportunity to earn a rate of return that is reasonably sufficient to assure confidence in the financial soundness of the utility and its ability to provide quality service; *and*
>
> **WHEREAS**, Through the *Resolution Supporting Consideration of Regulatory Policies Deemed as "Best Practices"* (2005), the

[14] "Resolution Supporting Consideration of Regulatory Policies Deemed as 'Best Practices'", Sponsored by the Committee on Water. Adopted by the NARUC Board of Directors, July 2013.

National Association of Regulatory Utility Commissioners (NARUC) has previously recognized the role of innovative regulatory policies and mechanisms in the ability for public water and wastewater utilities to address significant infrastructure investment challenges facing water and wastewater system operators; *and*

* * *

WHEREAS, Recent analysis shows that as compared to other regulated utility sectors, significant and widespread discrepancies continue to be observed between commission authorized returns on equity and observed actual returns on equity among regulated water and wastewater utilities; *and*

WHEREAS, The extent of such discrepancies suggests the existence of challenges unique to the regulation of water and wastewater utilities; *and*

* * *

WHEREAS, Deficient returns present a clear challenge to the ability of the water and wastewater industry to attract the capital necessary to address future infrastructure investment requirements necessary to provide safe and reliable service, which could exceed one trillion dollars over a 20-year period; *and*

WHEREAS, The NARUC Committee on Water recognizes the critical role of the implementation and the effective use of sound regulatory practice [sic] and the innovative regulatory policies identified in the *Resolution Supporting Consideration of Regulatory Policies Deemed as "Best Practices"*; and

* * *

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners, convened at its 2013 Summer Meeting in Denver, Colorado, identifies the implementation and effective use of sound regulatory practice [sic] and the innovative regulatory policies identified in the *Resolution Supporting Consideration of Regulatory Policies Deemed as "Best Practices"* (2005) as a critical component of a water and/or wastewater utility's reasonable ability to earn its authorized return; and *be it further*

RESOLVED, That NARUC recommends that economic regulators carefully consider and implement appropriate ratemaking measures as needed so that water and wastewater utilities have a reasonable opportunity to earn their authorized returns within their jurisdictions...

AWC itself is facing significant capital expenditures as it projects total capital investment needs of $82.5M for 2015 – 2017 (shown on Schedule F-3 of AWC application), representing an increase of more than 25% over 2014 net plant of $326.8M.

Q. PLEASE CONTINUE YOUR DISCUSSION OF BUSINESS RISKS.

A. Coupled with its capital-intensive nature, the water utility industry also experiences lower relative depreciation rates. Given that depreciation is one of the principal sources of internal cash flows for all utilities, lower depreciation rates mean that water utility depreciation as a source of internally-generated cash is far less than for electric, combination electric and gas or natural gas. Water utility assets have longer lives and, hence, longer capital recovery periods. As such, water utilities face greater risk due to inflation which results in a higher replacement cost per dollar of net plant than for other types of utilities. As shown on page 2 of Exhibit PMA-2, water utilities experienced an average depreciation rate of 3.0% for 2014, with AWC experiencing a lower rate of 2.67%. In contrast, in 2014, the electric, combination electric and gas, and natural gas utilities experienced average depreciation rates of 3.3%, 3.4% and 3.7%, respectively. Low depreciation rates (i.e. low cash flows) signify that the pressure on cash flows remains significantly greater for water utilities than for other types of utilities.

Not only is the water utility industry historically capital intensive, it is expected to incur significant capital expenditure needs over the next 20 years.

> In 2011, the EPA stated the following:[15]
> The survey estimated a total national infrastructure need of $384.2 billion for the 20-year period from January 2011 through December 2030.

* * *

[15] "Fact Sheet: "EPA's 2011 Drinking Water Infrastructure Needs Survey and Assessment," United States Environmental Protection Agency, Office of Water, April 2013.

> The large magnitude of the national need reflects the challenges confronting water systems as they deal with an infrastructure network that has aged considerably since these systems were constructed, in many cases, 50 to 100 years ago.
>
> * * *
>
> With $247.5 billion in needs over the next 20 years, transmission and distribution projects represent the largest category of need. This result is consistent with the fact that transmission and distribution mains account for most of the nation's water infrastructure. The other categories, in descending order of need are: treatment, storage, source and a miscellaneous category of needs called "other".

Q. FROM WHERE WILL THE NECESSARY CAPITAL TO FUND THIS LEVEL OF INFRASTRUCTURE REPLACEMENT BE RAISED?

A. This question highlights the importance of capital attraction. Water utility capital expenditures as large as those projected by the EPA will require significant amounts of financing. The three sources typically used for financing are debt, equity (common and preferred) and internally generated cash flow. All three are intricately linked to the opportunity to earn a sufficient rate of return as well as the ability to actually achieve that return. Consistent with *Hope* and *Bluefield*, the return must be sufficient to maintain credit quality as well as enable the attraction of necessary new capital, be it debt or equity capital. If unable to raise debt or equity capital, the utility must turn to either retained earnings or free cash flow [operating cash flow minus capital expenditures], both of which are directly linked to earning a sufficient rate of return. The level of free cash flows represents the financial flexibility of a company or a company's ability to meet the needs of its debt and equity holders. If either retained earnings or free cash flows are inadequate, it will be nearly impossible for the utility to attract the necessary new capital, on reasonable terms, to invest in needed new infrastructure. It is thus clear that an insufficient rate of return can be financially devastating for utilities and for their customers.

In view of the foregoing, the water utility industry's high capital intensity and low depreciation rates, coupled with the need for substantial infrastructure capital spending, makes the need to maintain financial integrity and the ability to attract needed new capital increasingly important in order for water utilities to be able to successfully meet the challenges they face.

Q. WHAT ARE THE BENEFITS TO THE COMPANY OF BEING ALLOWED THE OPPORTUNITY TO EARN A SUFFICIENT ROE?

A. The benefit to the Company of earning a sufficient ROE is that it provides the Company with improved cash flow, thus improving its creditworthiness and providing the ability to improve its retained earnings balance. This will allow AWC to issue less long-term debt than would otherwise be necessary. If the Company is required to increase borrowing because the allowed ROE is insufficient, it will incur a corresponding increase in financial risk, along with its cost of debt and its cost of common equity. This is consistent with the basic financial principle of risk and return, i.e., that the greater the perceived risk, the greater the investor required return.

Q. HAS THE COMMISSION FOUND THAT THE MAGNITUDE OF INFRASTRUCTURE REPLACEMENTS AND IMPROVEMENTS REQUIRED BY AWC NECESSITATES AN INCREASED ROE?

A. Yes. In AWC's recent general rate proceeding for its Eastern Group the Commission concluded that "the Eastern Group, due to the age of some of its systems and the resulting need for infrastructure replacement and improvement, necessitates a somewhat higher [authorized ROE].[16] Further, the Commission recognized in AWC's Eastern Group rate proceeding that an increased ROE "will assist the Company in attracting the capital necessary to fund the costs of replacing the Eastern Group's unique and extraordinary needs related to its aging

[16] Decision No. 73736, page 61, lines 11 – 17.

infrastructure."[17] In that proceeding, AWC's estimated total cost to replace aging infrastructure in the Eastern Group was $67 million. As presented by Mr. Schneider in Section VIII of his direct testimony, the estimated total cost to replace aging infrastructure in AWC's Western Group is $56 million. This is in addition to AWC's total projected capital investment needs of $82.5M for 2015 – 2017 (shown on Schedule F-3 off AWC application), cited above.

Q. DOES AWC FACE ADDITIONAL BUSINESS RISK?

A. Yes. AWC faces additional unique business risks due to declining sales which, when combined with an inverted-tier rate design, cause revenues to fall short of costs. Additionally, the impact of SDWA compliance as it relates to arsenic and nitrates, as explained by Mr. Garfield in Section V of his direct testimony, has a much greater impact on AWC than on other water utilities in other parts of the country and Arizona. Finally, AWC's small size relative to the proxy group results in increased business risk.

As discussed above, the greater the level of risk, the greater the rate of return required by investors, consistent with the basic financial precept of risk and return. Therefore an upward adjustment to the indicated common equity cost rate is necessary to reflect AWC's unique risks, and will be discussed below.

Q. HOW DOES AWC'S SMALLER SIZE INCREASE ITS BUSINESS RISK RELATIVE TO THE PROXY GROUP?

A. As I discuss below, AWC's smaller size, $161.959 million in total capitalization, shown on Exhibit PMA-3, relative to the average total capitalization of $2.229 billion for the eight publicly traded water companies, shown on Exhibit PMA-4, page 1, indicates greater relative business risk because all else being equal, size has a bearing on risk. Further evidence that smaller firms are more risky is the fact that investors demand greater returns to compensate for the lack of marketability and liquidity of the securities of smaller firms. The fact that it is the

[17] Decision No. 74463, page 42, lines 19 – 21.

use of funds invested, and not the source of those funds, which gives rise to the risk of any investment is a basic financial principle.[18]

Brigham,[19] a well known authority, states:

> A number of researchers have observed that portfolios of small-firms have earned consistently higher average returns than those of large-firms stocks; this is called "small-firm effect." On the surface, it would seem to be advantageous to the small firms to provide average returns in a stock market that are higher than those of larger firms. In reality, it is bad news for the small firm; what *the small-firm effect means is that the capital market demands higher returns on stocks of small firms than on otherwise similar stocks of the large firms.* (italics added)

Consistent with the financial principle of risk and return discussed above, such increased risk due to small size must be taken into account in the allowed rate of return on common equity. Therefore, the Commission should authorize a cost of equity in this proceeding that appropriately reflects AWC's relevant unique risks, including the impact of its small size.

V. Financial Risk

Q. PLEASE DEFINE FINANCIAL RISK AND EXPLAIN WHY IT IS IMPORTANT TO THE DETERMINATION OF A FAIR RATE OF RETURN.

A. Financial risk is the additional risk created by the introduction of senior capital, i.e., debt and preferred stock, into the capital structure. The higher the proportion of senior capital in the capital structure, the higher the financial risk which must be factored into the common equity cost rate, consistent with the previously mentioned basic financial principle of risk and return, i.e., investors demand a higher common equity return as compensation for bearing higher investment risk.

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[18] Brealey, Richard A. and Myers, Stewart C., Principles of Corporate Finance (McGraw-Hill Book Company, 1996) 204-205, 229.

[19] Brigham, Eugene F., Fundamentals of Financial Management, Fifth Edition (The Dryden Press, 1989) 623.

Q. CAN THE COMBINED BUSINESS RISKS (I.E., INVESTMENT RISK) OF AN ENTERPRISE BE PROXIED BY BOND AND CREDIT RATINGS?

A. Yes, similar bond/issuer credit ratings reflect and are representative of similar combined business and financial risks, i.e., total risk faced by bond investors. Although specific business or financial risks may differ between companies, the same bond/credit rating indicates that the combined risks are similar, albeit not necessarily equal (as the purpose of the bond/credit rating process is to assess credit quality or credit risk and not common equity risk). Risk distinctions within Standard & Poor's ("S&P") bond/issuer rating categories are recognized by a plus or minus (i.e., within the A category, an S&P rating can be at A+, A, or A-). Similarly, risk distinctions for Moody's ratings are distinguished by numerical rating gradations (i.e., within the A category, a Moody's rating can be A1, A2 and A3). As shown on Exhibit PMA-7, page 5, the average S&P long-term issuer rating of the eight publicly traded water companies is A and the average Moody's long-term issuer rating is A2/A3.

VI. <u>Arizona Water Company's Western Group</u>

Q. HAVE YOU REVIEWED FINANCIAL DATA FOR AWC?

A. Yes. AWC's Western Group, operating through six public water systems, provided water service to an average 31,691 retail customers during the test year ended December 31, 2014. The six public water systems include: the Pinal Valley, Stanfield, Tierra Grande and Coolidge Airport systems (collectively referred to as the Pinal Valley service area), serving a total of 28,723 customers; the White Tank system with 2,321 customers; and, the Ajo system with 647 customers.

The total Company serves approximately 86,500 customers in Cochise, Coconino, Gila, Maricopa, Navajo, Pima, Pinal and Yavapai counties. As shown on Exhibit PMA-3, during the five year period ending 2014, the achieved average earnings rate on book common equity for AWC (total company) was 8.00%. The

five-year ending 2014 average common equity ratio, based upon total permanent capital, was 51.83%.

Total debt to EBITDA for the years 2010-2014 ranged between 2.64 and 3.83 times, averaging 3.13 times. Funds from operations relative to total debt ranged from 18.51% to 29.16%, averaging 24.36%. Funds from operations relative to interest ranged between 3.70 and 4.75 times, averaging 3.89 times. EBITDA relative to interest ranged between 3.98 and 6.16 times, averaging 5.20 times. Cash flows from operations relative to total debt ranged between 19.65% and 26.44%, averaging 23.68%. Free operating cash flows relative to total debt ranged between 4.55% and 12.05%, averaging 8.74%. Discretionary cash flows relative to total debt ranged between a negative 2.11% and 6.34%, averaging 2.48%. All of these metrics indicate greater credit risk for AWC compared to the proxy group.

VII. Proxy Group

Q. PLEASE EXPLAIN HOW YOU CHOSE THE PROXY GROUP OF EIGHT PUBLICLY TRADED WATER COMPANIES.

A. I chose the proxy group by selecting those companies which meet the following criteria: 1) they are included in the *Value Line's* standard edition (April 17, 2015; 2) they have 70% or greater of 2014 total operating income derived from, and 70% or greater of 2014 total assets devoted to, regulated water operations; 3) at the time of the preparation of this testimony, they had not publicly announced that they were involved in any major merger or acquisition activity (i.e., one publicly-traded utility merging with or acquiring another); 4) they have not cut or omitted their common dividends during the five years ending 2014, or through the time of the preparation of this testimony; 5) they have a *Value Line* adjusted beta; and 6) they have *Value Line*, Reuters, Zacks or Yahoo! Finance, consensus five-year earnings per share ("EPS") growth rate projections. The following eight publicly traded water companies meet these criteria: American

States Water Co., American Water Works Co., Inc., Aqua America, Inc., California Water Service Group., Connecticut Water Service, Inc., Middlesex Water Co., SJW Corp. and York Water Co.

Q. HAVE YOU REVIEWED FINANCIAL DATA FOR THE PROXY GROUP?

A. Yes. Page 1 of Exhibit PMA-4 contains comparative capitalization and financial statistics for the eight publicly traded water companies for the years 2010-2014.

As shown on page 1, during the five-year period ending 2014, the historically achieved average earnings rate on book common equity for the group averaged 10.03%. The average common equity ratio based upon permanent capital (excluding short-term debt) was 51.24%, and the average dividend payout ratio was 60.82%.

Total debt outstanding for the proxy group as a percent of EBITDA for the years 2010-2014 ranged between 3.65 and 4.55 times, averaging 4.01 times, while funds from operations relative to total debt range between 17.60% and 25.83%, averaging 21.31%.

VIII. Common Equity Cost Rate Models

Q. ARE THE COST OF COMMON EQUITY MODELS YOU USE MARKET-BASED MODELS?

A. Yes. It is important to use market-based models because the cost of common equity is a function of investors' perception of risk, which is embodied in the market prices they pay. The DCF model is market-based in that market prices are utilized in developing the dividend yield component of the model. The RPM is market-based in that the bond ratings and expected bond yields used in the application of the RPM reflect the market's assessment of bond/credit risk. Also, market prices are used in the development of the returns and equity risk premiums used in the Predictive Risk Premium Model ("PRPM"). In addition, the use of betas to determine the equity risk premium also reflects the market's assessment of market/systematic risk, as betas are derived from regression

analyses of market prices. The CAPM is market-based for many of the same reasons that the RPM is market-based (i.e., the use of expected bond (Treasury bond) yields and betas).

A. <u>Discounted Cash Flow Model ("DCF")</u>

Q. WHAT IS THE THEORETICAL BASIS OF THE DCF MODEL?

A. The theory underlying the DCF model is that the present value of an expected future stream of net cash flows during the investment holding period can be determined by discounting those cash flows at the cost of capital, or the investors' capitalization rate. DCF theory states that an investor buys a stock for an expected total return rate which is derived from cash flows received in the form of dividends plus appreciation in market price (the expected growth rate). Mathematically, the dividend yield on market price plus a growth rate equals the capitalization rate (i.e., the total common equity return rate expected by investors).

Q. WHICH VERSION OF THE DCF MODEL DO YOU USE?

A. I utilize the single-stage constant growth DCF model. Because utilities, especially water utilities, are generally in the mature stage of their lifecycles and not transitioning from one growth stage to another, this version of the DCF model is appropriate. Further, in my experience, the single-stage constant growth DCF model is the most widely utilized version of the DCF in public utility rate regulation.

Q. PLEASE DESCRIBE THE DIVIDEND YIELD YOU USED IN YOUR APPLICATION OF THE DCF MODEL.

A. The unadjusted dividend yields are based upon a recent (May 29, 2015) indicated dividend, divided by the average of closing market prices for the 60 days ending May 29, 2015, as shown in Column [1] on page 1 of Exhibit PMA-5.

Q. PLEASE EXPLAIN THE ADJUSTED DIVIDEND YIELD SHOWN ON PAGE 1 OF EXHIBIT PMA-5, COLUMN [7].

A. Because dividends are paid quarterly, or periodically, as opposed to continuously (daily), an adjustment must be made to the dividend yield. This is often referred to as the discrete, or the Gordon Periodic, version of the DCF model.

DCF theory calls for the use of the full growth rate, referred to as D_1, in calculating the dividend yield component of the model. However, since the various companies in the proxy group increase their quarterly dividend at various times during the year, a reasonable assumption is to reflect one-half the annual dividend growth rate in the dividend yield component, referred to as $D_{1/2}$. This is a conservative approach because it does not overstate the dividend yield, which should be representative of the next twelve-month period. Therefore, the actual average dividend yields in Column [1], page 1 of Exhibit PMA-5, have been adjusted upward to reflect one-half the average projected growth rate shown in Column [6].

Q. PLEASE EXPLAIN THE BASIS OF THE GROWTH RATES OF THE PROXY GROUP WHICH YOU USE IN YOUR APPLICATION OF THE DCF MODEL.

A. Exhibit PMA-6 shows that on average, approximately 42% of the common shares of the eight publicly traded water companies are held by individuals as opposed to institutional investors. Individual investors, who tend to have more limited resources than institutional investors, are likely to place great significance on the opinions expressed by financial information services, such as *Value Line*, Reuters, Zacks and Yahoo! Finance, which are easily accessible and/or available on the Internet and through public libraries. Individual, as well as institutional, investors recognize that security analysts have significant insight into the dynamics of the industries and individual companies they analyze, as well as an entity's historical and future abilities to effectively manage the effects of changing laws and regulations and ever changing economic and market conditions.

Security analysts' earnings expectations have a significant, but not sole, influence on market prices and are therefore reasonable indicators of investor expectations.[20] As noted by Morin[21]:

> Because of the dominance of institutional investors and their influence on individual investors, analysts' forecasts of long-run growth rates provide a sound basis for estimating required returns. Financial analysts exert a strong influence on the expectations of many investors who do not possess the resources to make their own forecasts, that is, they are a cause of g.

Thus, the use of security analysts earnings growth rate forecasts in a DCF analysis provides a better matching between investors' market price appreciation expectations and the growth rate component of the DCF than other proxies for growth, e.g., historical EPS or dividend per share ("DPS") growth rates.

Q. PLEASE SUMMARIZE THE DCF MODEL RESULTS.

A. As shown on page 1 of Exhibit PMA-5, the average result of the single-stage DCF model is 8.93%, while the median result is 8.35%. I have averaged these two results in arriving at a conclusion of a DCF-indicated common equity cost rate of 8.64% for the proxy group. By doing so, I have not only considered the DCF results for each company, but have not given undue weight to outliers on either the high or the low side.

B. <u>The Risk Premium Model ("RPM")</u>

Q. PLEASE DESCRIBE THE THEORETICAL BASIS OF THE RPM.

A. The RPM is based upon the basic financial principle of risk and return (i.e., that investors require greater returns for bearing greater risk). The RPM recognizes that common equity capital has greater investment risk than debt capital, as common equity shareholders are last in line in any claim on an entity's assets and earnings, behind debt holders. Therefore, investors require higher returns

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[20] Roger A. Morin, New Regulatory Finance (Public Utility Reports, Inc., 2006) 298-303.
[21] Morin 298.

from investment in common stocks than from investment in bonds to compensate them for bearing the additional risk.

While the investor required common equity return cannot be directly determined or observed, it is possible to directly observe bond returns and yields. According to RPM theory, one can assess a common equity risk premium over bonds, either historically or prospectively, and then use that premium to derive a cost rate of common equity. In summary, according to RPM theory, the cost of common equity equals the expected cost rate for long-term debt capital, plus a risk premium over that cost rate to compensate common shareholders for the added risk of being unsecured and last-in-line for any claim on a corporation's assets and earnings.

Q. PLEASE EXPLAIN HOW YOU DERIVED YOUR INDICATED COST OF COMMON EQUITY BASED UPON THE RPM.

A. I relied upon the results of the application of two risk premium methods. The first method is the Predictive Risk Premium Model (PRPM). The second method is a risk premium model using an adjusted total market approach.

Q. PLEASE EXPLAIN THE PRPM.

A. The PRPM, published in the *Journal of Regulatory Economics (JRE)*[22] and *The Electricity Journal (TEJ)*,[23] was developed from the work of Robert F. Engle, who shared the Nobel Prize in Economics in 2003, "for methods of analyzing economic time series with time-varying volatility ("ARCH")"[24] (with "ARCH" standing for autoregressive conditional heteroskedasticity). In other words, the

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22 "A New Approach for Estimating the Equity Risk Premium for Public Utilities", Pauline M. Ahern, Frank J. Hanley and Richard A. Michelfelder, Ph.D. The Journal of Regulatory Economics (December 2011), 40:261-278.

23 "Comparative Evaluation of the Predictive Risk Premium Model™, the Discounted Cash Flow Model and the Capital Asset Pricing Model", Pauline M. Ahern, Richard A. Michelfelder, Ph.D., Rutgers University, Dylan W. D'Ascendis, and Frank J. Hanley, The Electricity Journal (May, 2013).

24 www.nobelprize.org

volatility of stock returns and equity risk premiums changes over time and is related from one period to the next. Engle discovered that the volatility in market prices, returns, and equity risk premiums also clusters over time, making them highly predictable and available to predict future levels of risk and risk premiums. In other words, the predicted equity risk premium is derived from the prediction of volatility (risk). The PRPM estimates the risk / return relationship directly by analyzing the actual results of investor behavior, rather than using subjective judgment, as to the inputs required for the application of other cost of common equity models. Thus, the PRPM is not based upon an estimate of investor behavior, but rather upon the evaluation of the actual results of that behavior (i.e., the variance of historical equity risk premiums).

The inputs to the model are the historical returns on the common shares of each publicly traded utility in the proxy group, minus the historical monthly yield on long-term U.S. Treasury securities, through May 2015. Using a generalized form of ARCH, known as GARCH, each water utility's projected equity risk premium was determined using Eviews© statistical software. The forecasted 30-year U.S. Treasury Bond yield of 3.7% according to the June 2, 2015, *Blue Chip Financial Forecasts (Blue Chip)* consensus forecast for the six quarters ending with the third quarter 2016, was averaged with *Blue Chip's* long-range forecasts for 2017-2021 and 2022-2026, shown on pages 9 and 10 of Exhibit PMA-7. The risk-free rate of 3.69% was then added to each company's PRPM-derived equity risk premium to arrive at a PRPM-derived cost of common equity, as shown on page 2 of Exhibit PMA-7, which presents the average and median results for each proxy company. As shown on page 2, the average PRPM indicated common equity cost rate is 11.94%, while the median is 11.24% for the eight publicly traded water companies. Consistent with my use of the average of the average and median DCF results, I rely upon the average of the

average and median PRPM results of 11.59% (11.59% = (11.94% + 11.24%)/2) as my conclusion of the PRPM equity cost rate.

Q. PLEASE EXPLAIN THE ADJUSTED TOTAL MARKET APPROACH RPM.

A. The adjusted total market approach RPM adds a prospective public utility bond yield to an equity risk premium, which is derived from a beta-adjusted total market equity risk premium and an equity risk premium based upon the S&P Utilities Index.

Q. PLEASE EXPLAIN THE BASIS OF THE ADJUSTED PROSPECTIVE BOND YIELD OF 5.06% APPLICABLE TO THE EIGHT PUBLICLY TRADED WATER COMPANIES, SHOWN ON PAGE 3 OF EXHIBIT PMA-7.

A. The first step in the adjusted total market approach RPM analysis is to determine the expected bond yield. Because both ratemaking and the cost of capital, including the common equity cost rate, are prospective in nature, a prospective yield on long-term debt, similarly rated to the proxy group, is essential. Hence, I rely upon the June 1, 2015, *Blue Chip* consensus forecast of the expected yield on Aaa rated corporate bonds for the six calendar quarters ending with the third calendar quarter of 2016, averaged with *Blue Chip's* long-range forecasts for 2017-2021 and 2022-2026 (shown on pages 9 and 10 of Exhibit PMA-7). As shown on Line No. 1 of page 3, the average expected yield on Moody's Aaa rated corporate bonds is 4.75%. An adjustment of 0.18% is necessary to adjust the average Aaa corporate bond yield to reflect an A rated public utility bond, as shown on Line No. 2 of the exhibit, resulting in an expected Moody's A rated public utility bond yield of 4.93%, shown on Line No. 3.

Since the eight publicly traded water companies' average Moody's issuer rating is A2/A3, an additional adjustment of 0.13% is necessary to make the prospective bond yield applicable to the proxy group's average A2/A3 long-term issuer rating, as detailed in Note 3 on page 3 of Exhibit PMA-7. Therefore, the

adjusted prospective bond yield is 5.06% for the eight publicly traded water companies, as shown on Line No. 5.

Q. PLEASE EXPLAIN THE METHOD OF ESTIMATING THE EQUITY RISK PREMIUM IN THE ADJUSTED TOTAL MARKET APPROACH.

A. I evaluated the results of market equity risk premium studies based upon Ibbotson Associates' data and *Value Line's* forecasted total annual market return in excess of the prospective yield on Moody's Aaa rated corporate bonds, as well as two different studies of the equity risk premium for public utilities with Moody's A rated bonds, as detailed on pages 8 and 11 of Exhibit PMA-7. As shown on Line No. 3, page 7 of Exhibit PMA-7, the average equity risk premium applicable to the eight publicly traded water companies is 4.87%. This estimate is the result of a beta-derived equity risk premium averaged with the average public utility equity risk premium based upon holding period returns relative to bonds rated A by Moody's.

Q. PLEASE EXPLAIN THE BASIS OF THE BETA-DERIVED EQUITY RISK PREMIUM.

A. The basis of the beta-derived equity risk premium applicable to the proxy group is shown on page 8 of Exhibit PMA-7. The beta-derived equity risk premium is relevant because betas are derived from the market prices of common stocks over a recent five-year period. Beta is a measure of relative risk to the market as a whole and a logical means by which to allocate an entity's/proxy group's share of the total market's equity risk premium relative to corporate bond yields.

The total market equity risk premium utilized is 6.44%, based upon an average of the long-term arithmetic mean historical market equity risk premium; a predicted market equity risk premium based upon the PRPM; a forecasted market equity risk premium based upon *Value Line's* projected market appreciation and dividend yield; and, a forecasted market equity risk premium

based upon the S&P 500's projected market appreciation and dividend yield, as detailed below and in Notes 1 through 4 on page 8 of Exhibit PMA-7.

Q. HOW DID YOU DERIVE THE LONG-TERM HISTORICAL MARKET EQUITY RISK PREMIUM?

A. To derive the historical (expectational) market equity risk premium, I used the most recent data on holding period returns for large company common stocks from the Stocks, Bonds, Bill and Inflation Ibbotson® SBBI® 2015 Market Report ("SBBI – 2015 Market Report")[25], and the average historical yield on Moody's Aaa and Aa rated corporate bonds for the period 1926-2014. The use of holding period returns over a very long period of time is useful because it is consistent with the long-term investment horizon presumed by the DCF model. As explained in Note 1 on page 8 of Exhibit PMA-7, the long-term arithmetic mean monthly total return on large company common stocks of 12.07% and the long-term arithmetic mean monthly yield on Moody's Aaa and Aa rated corporate bonds of 6.18%, were used. As shown on Line No. 1, the resultant long-term historical equity risk premium on the market as a whole is 5.89%.

I used arithmetic mean monthly total return rates for the large company stocks and yields (income returns) for Moody's Aaa/Aa corporate bonds, because they are appropriate for cost of capital purposes, as noted in the Ibbotson® SBBI® 2015 Classic Yearbook – Market Results for Stocks, Bonds, Bill and Inflation 1926 – 2015 ("SBBI – 2015")[26]. Arithmetic mean return rates and yields are appropriate because ex-post (historical) total returns and equity risk premiums differ in size and direction over time, providing insight into the variance and standard deviation of returns. Because the arithmetic mean captures the prospect for variance in returns and equity risk premiums, it provides the valuable insight needed by investors in estimating future risk when making a current

[25] Stocks, Bonds, Bills and Inflation Ibbotson® SBBI® 2015 Market Report, Morningstar, Inc., 2015.

[26] Ibbotson® SBBI® 2015 Classic Yearbook – Market Results for Stocks, Bonds, Bills and Inflation 1926 – 2014, Morningstar, Inc., 2015 153.

investment. Absent such valuable insight into the potential variance of returns, investors cannot meaningfully evaluate prospective risk. If investors alternatively relied upon the geometric mean of ex-post equity risk premiums, they would have no insight into the potential variance of future returns because the geometric mean relates the change over many periods of time to a constant rate of change, thereby obviating the period-to-period fluctuations, or variance, *critical to risk analysis.*

Only the arithmetic mean takes into account all of the returns/premiums, hence, providing meaningful insight into the variance and standard deviation of those returns/premiums.

Q. PLEASE EXPLAIN THE DERIVATION OF PRPM MARKET EQUITY RISK PREMIUM.

A. The inputs to the model are the historical monthly returns on large company common stocks from the SBBI – 2015 Market Report, minus the monthly yields on Aaa and Aa corporate bonds during the period from January 1926, through April 2015, consistent with the rationale for using the long-term historical arithmetic market equity risk premium, discussed above. Using the previously discussed generalized form of ARCH, known as GARCH, the market's projected equity risk premium was determined using Eviews© statistical software. The resulting predicted market equity risk premium based upon the PRPM is 6.34%.

Q. PLEASE EXPLAIN THE DERIVATION OF A MARKET EQUITY RISK PREMIUM BASED UPON *VALUE LINE'S* 3-5 YEAR ESTIMATED MEDIAN TOTAL ANNUAL MARKET RETURN, MINUS THE PROSPECTIVE YIELD ON AAA RATED CORPORATE BONDS, IN YOUR DEVELOPMENT OF A MARKET EQUITY RISK PREMIUM FOR YOUR RPM ANALYSIS.

A. Because both ratemaking and the cost of capital, including the cost rate of common equity, are prospective, a prospective market equity risk premium is

required. The derivation of the *Value Line* based forecasted or prospective market equity risk premium of 5.05% can be found in Note 3 on page 8 of Exhibit PMA-7. Consistent with the development of the dividend yield component of my DCF analysis, it is derived from an average of the most recent thirteen weeks ending May 29, 2015, 3-5 year estimated median market price appreciation potential from *Value Line,* plus an average of the median estimated dividend yield for the common stocks of the approximately 1,700 firms covered in *Value Line*'s Standard Edition.

The average median expected price appreciation is 35%, which translates to a 7.79% annual appreciation and, when added to the average (similarly calculated) median dividend yield of 2.01% equates to a forecasted annual total market return rate of 9.80%. The forecasted total market equity risk premium of 5.05%, shown on Line No. 3, page 8 of Exhibit PMA-7, is derived by deducting the 4.75% prospective yield on Moody's Aaa rated corporate bonds, discussed previously, from the *Value Line*-derived projected market return of 9.80% (5.05% = 9.80% - 4.75%).

Q. PLEASE EXPLAIN THE DERIVATION OF THE MARKET EQUITY RISK PREMIUM BASED UPON THE S&P 500.

A. Using data from Bloomberg Professional Service, an expected total return for the S&P 500 can be derived by adding the expected dividend yield for the S&P 500 to long-term growth in earnings per share (as a proxy for capital appreciation). The expected total return for the S&P 500 is 13.22%. Subtracting the prospective yield on Moody's Aaa rated corporate bonds of 4.75% results in a 8.47% projected market equity risk premium.

In arriving at my conclusion of market equity risk premium of 6.44% on Line No. 5 on page 8 of the exhibit, I averaged the historical market equity risk premium of 5.89%; the PRPM based market equity risk premium of 6.34%; the *Value Line*-based forecasted market equity risk premium of 5.05%; and, the S&P

500 projected market equity risk premium of 8.47% shown on Line Nos. 1 through 4. (6.44% = ((5.89% + 6.34% + 5.05% + 8.47%) / 4).

Q. WHAT IS YOUR CONCLUSION OF A BETA-DERIVED EQUITY RISK PREMIUM FOR USE IN YOUR RPM ANALYSIS?

A. As shown on Exhibit PMA-8, the average of the average and median *Value Line* and Bloomberg betas for the eight publicly traded water companies average is 0.77. Applying a beta of 0.77 to the market equity risk premium of 6.44%, on Line No. 5 of page 8 of Exhibit PMA-7, results in a beta adjusted equity risk premium of 4.96% for the eight publicly traded water companies.

Q. HOW DID YOU DERIVE THE 4.77% EQUITY RISK PREMIUM BASED UPON THE S&P UTILITY INDEX AND MOODY'S A RATED PUBLIC UTILITY BONDS?

A. First, I derived the long-term monthly arithmetic mean equity risk premium for the S&P Utility Index total returns (10.69%) over monthly A rated public utility bond yields (6.48%) from 1928-2014 to arrive at an equity risk premium of 4.21%, as shown on Line No. 3, on page 11 of Exhibit PMA-7. I then performed the PRPM using historical monthly equity risk premiums from January 1928, through May 2015, to arrive at the PRPM derived equity risk premium of 4.47%, shown on Line No. 4, on page 11. Finally, I derived the projected total return on the S&P Utilities Index using data from Bloomberg Professional Service of 10.55%, as explained in Footnote 4 on poll, and subtracted the prospective Moody's A rated public utility bond yield of 4.93% (Line No. 3 on page 3 of Exhibit PMA-7). The resulting equity risk premium is 5.62%.

I rely upon the average of the historical (4.21%), the PRPM (4.47%) and S&P Utilities Index (5.62%) derived equity risk premiums, which is 4.77%. (4.77% = ((4.21% + 4.47% + 5.62%) / 3).

Q. WHAT IS YOUR CONCLUSION OF AN EQUITY RISK PREMIUM FOR USE IN YOUR ADJUSTED TOTAL MARKET APPROACH RPM ANALYSIS?

A. The equity risk premium applicable to the proxy group of eight publicly traded water companies is 4.87%. This was derived by averaging the beta-derived premium of 4.96% (calculated on page 8 of Exhibit PMA-7) with the equity risk premium of 4.77% based upon the holding period returns of public utilities with Moody's A rated bonds (calculated on page 11 of Exhibit PMA-7), as summarized on Line No. 3, page 7 of Exhibit PMA-7, (i.e., (4.87% = (4.96% + 4.77%) / 2)).

Q. WHAT IS THE INDICATED RPM COMMON EQUITY COST RATE BASED UPON THE ADJUSTED TOTAL MARKET APPROACH?

A. It is 9.93% for the eight publicly traded water companies, as shown on Line No. 7, page 3 of Exhibit PMA-7 page 3.

Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE PRPM AND THE ADJUSTED TOTAL MARKET APPROACH RPM?

A. As shown on page 1 of Exhibit PMA-7, the indicated RPM-derived common equity cost rate is 10.76%, derived by averaging the PRPM results with those based upon the adjusted total market approach. (10.76% = ((11.59% + 9.93%) / 2).

C. <u>The Capital Asset Pricing Model ("CAPM")</u>

Q. PLEASE EXPLAIN THE THEORETICAL BASIS OF THE CAPM.

A. CAPM theory defines risk as the covariability of a security's returns with the market's returns as measured by beta (β). A beta less than 1.0 indicates lower variability while a beta greater than 1.0 indicates greater variability than the market.

The CAPM assumes that all other risk, i.e., all non-market or unsystematic risk, can be eliminated through diversification. The risk that cannot be eliminated through diversification is called market or systematic risk. In addition, the CAPM presumes that investors require compensation only for these systematic risks that are the result of macroeconomic and other events that affect the returns on all assets. The model is applied by adding a risk-free rate of return to a market

risk premium, which is adjusted proportionately to reflect the systematic risk of the individual security relative to the total market, as measured by beta. The traditional CAPM model is expressed as:

$$Rs = Rf + \beta(Rm - Rf)$$

Where:

Rs	=	Return rate on the common stock
Rf	=	Risk-free rate of return
Rm	=	Return rate on the market as a whole
β	=	Adjusted beta (volatility of the security relative to the market as a whole)

Numerous tests of the CAPM have measured the extent to which security returns and betas are related, as predicted by the CAPM, confirming the CAPM's validity. The empirical CAPM ("ECAPM") reflects the reality that, while the results of these tests support the notion that beta is related to security returns, the empirical Security Market Line ("SML") described by the CAPM formula is not as steeply sloped as the predicted SML.[27]

In view of theory and practical research, I have applied both the traditional CAPM and the ECAPM to the companies in the proxy group, and averaged the results.

Q. PLEASE DESCRIBE YOUR SELECTION OF THE BETA COEFFICIENT FOR YOUR CAPM ANALYSIS?

A. I relied upon an average of the adjusted betas published by the *Value Line* and provided by Bloomberg Professional Service.

Q. PLEASE DESCRIBE YOUR SELECTION OF A RISK-FREE RATE OF RETURN FOR YOUR CAPM ANALYSIS.

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[27] Morin 175.

A. As shown in column [5], of Exhibit PMA-8, the risk-free rate adopted for both applications of the CAPM is 3.69%. The risk-free rate for my CAPM analysis is based upon the average of the June 1, 2015, *Blue Chip* consensus forecast for the third calendar quarter of 2016, averaged with *Blue Chip's* long-range forecasts for 2017-2021, and 2022-2026, as shown in Note 2.

Q. WHY IS THE YIELD ON LONG-TERM U.S. TREASURY BONDS APPROPRIATE FOR USE AS THE RISK-FREE RATE?

A. The yield on long-term U.S. Treasury T-Bonds is almost risk-free and its term is consistent with the long-term cost of capital to public utilities (measured by the yields on A rated public utility bonds), the long-term investment horizon inherent in utilities' common stocks, the long-term investment horizon presumed in the standard DCF model employed in regulatory ratemaking, and the long-term life of the jurisdictional rate base to which the allowed fair rate of return (i.e., cost of capital) is applied. In contrast, short-term U.S. Treasury yields are more volatile and largely a function of Federal Reserve monetary policy.

Q. PLEASE EXPLAIN THE ESTIMATION OF THE EXPECTED EQUITY RISK PREMIUM FOR THE MARKET.

A. The basis of the market equity risk premium is explained in detail in Note 1 of Exhibit PMA-8. It is derived from *Value Line's* 3-5 year median total market price appreciation projections, averaged over the most recent thirteen weeks ending May 29, 2015; the arithmetic mean monthly equity risk premiums of large company common stocks relative to long-term U.S. Treasury bond income yields, according to the SBBI – 2015 Market Report, from 1926-2014; the PRPM predicted market equity risk premium using monthly equity risk premiums for large company common stocks relative to long-term U.S. Treasury securities from January 1926 through April 2015, and the projected total return on the S&P 500, less the projected risk free rate, as detailed below and in Note 1 on of Exhibit PMA-8.

The *Value Line*-derived forecasted total market equity risk premium is derived by deducting the 3.69% risk-free rate, discussed above, from the *Value Line* projected total annual market return of 9.80%, also discussed above, resulting in a forecasted total market equity risk premium of 6.11%.

The Ibbotson Arithmetic Mean Market Risk Premium ("MRP") is derived by deducting the long-term income return on U.S. Government Securities of 5.23%, from the SBBI – 2015 Market Report monthly historical total market return of 12.07%, resulting in an historical market equity risk premium of 6.84%.

The PRPM market equity risk premium is 7.15%, derived using the PRPM, discussed above, relative to the yields on long-term U.S. Treasury securities from January 1926, through April 2015.

The S&P 500 projected market equity risk premium of 9.53% is derived by subtracting the 3.69% projected risk-free rate, discussed above, from the projected total return of 13.22%, also discussed above.

These four market equity risk premiums result in an average total market equity risk premium of 7.41%. (7.41% = ((6.11% + 6.84% + 7.15% + 9.53%) / 4)

Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE TRADITIONAL AND EMPIRICAL CAPM TO THE PROXY GROUP?

A. As shown on Exhibit PMA-8, the average traditional CAPM equity cost rate is 9.31%, while the average ECAPM result is 9.76%. Likewise, the median traditional CAPM cost rate is 9.40%, while the median ECAPM cost rate is 9.82%. Consistent with my reliance upon the average of the average and median results of the DCF discussed above, I rely upon the average of the average and median results of the traditional CAPM and ECAPM for the proxy group, 9.54% and 9.61%, respectively, or 9.58% as shown on column [8] of Exhibit PMA-8. (9.58% = ((9.54% + 9.61%) / 2).

IX. Conclusion of Common Equity Cost Rate

Q. WHAT IS YOUR RECOMMENDED COMMON EQUITY COST RATE?

A. It is 10.75%, based upon the common equity cost rates resulting from the application of cost of common equity models to the eight publicly traded water companies, as adjusted for AWC's credit and unique business risks.

As discussed above, I employ multiple cost of common equity models as primary tools in arriving at my recommended common equity cost rate because: 1) no single model is so inherently precise that it can solely be relied upon to the exclusion of other theoretically sound models; 2) all of the models are market-based; 3) the use of multiple models adds reliability to the estimation of the common equity cost rate; and 4) the prudence of using multiple cost of common equity models is supported in both the financial literature and regulatory precedent. Therefore, no single model should be relied upon exclusively to estimate investors' required rate of return on common equity.

The results of my cost of common equity models applied to the eight water companies are shown on Exhibit PMA-1, page 2 and are summarized below:

Table 3

	Proxy Group of Eight Publicly Traded Water Companies
Discounted Cash Flow Model	8.64%
Risk Premium Model	10.76%
Capital Asset Pricing Model	9.58%
Indicated Common Equity Cost	9.60%
Credit Risk Adjustment	0.63%
Business Risk Adjustment	0.50%
Indicated Common Equity Cost Rate	10.73%
Recommended Common Equity Cost Rate	10.75%

Based upon these common equity cost rate results, I conclude that a common equity cost rate of 9.60% is indicated for the eight publicly traded water companies before applying the credit and unique business risk adjustments to determine AWC's common equity cost rate of 10.75%, as previously discussed.

A. Credit Risk Adjustment

Q. PLEASE DISCUSS AWC'S CREDIT RISK.

A. In my opinion, AWC's bonds, if rated by Moody's and/or S&P, would be rated in the Baa/BBB bond rating category. First, the cost rate on AWC's General Mortgage Bonds ("GMBs") includes a premium over the cost rate on the First Mortgage Bonds ("FMBs") of its utility affiliate, San Gabriel Valley Water Company ("SGVWC"), which in turn is based upon the spread between Baa corporate bonds over 30-year U.S. Treasury Bonds. Albeit a corporate, not public utility,[28] profile, it is reasonable to assume that were SGVWC's bonds

[28] Given that public utility bond yields are generally higher than corporate bond yields, the Company is actually being reasonably conservative.

rated by either Moody's or S&P, they would be rated Baa/BBB. Because AWC's debt cost rate is similar to, albeit slightly higher than, SGVWC's, it is conservative to assume that AWC's bonds, if rated, would be rated no higher than Baa/BBB.

In addition, although S&P states that its metrics are not intended to be precise indications or guarantees of ratings opinions, they can be used to provide insight into the likely bond rating of AWC. To that end, AWC's cash flow/leverage metrics are consistent with S&P's cash flow/leverage metrics for a public utility assigned a "Significant" to "Aggressive" financial risk profile, as shown on Exhibit PMA-9. As shown on the exhibit, 4 of AWC's cash flow/leverage metrics indicate a "Significant" financial risk profile, while 3 of AWC's metrics indicate an "Aggressive" financial risk profile. As can be gleaned from Table 3 at the bottom of Exhibit PMA-9, assuming either an "Excellent" or "Strong" business risk profile, AWC's bonds/issuer rating would be in the bbb or Baa bond/issuer rating category. Given that a premium of 10 basis points over SGVWC's debt cost rate was required by Prudential, which purchased AWC's most recent bond issue, it is nonetheless reasonable to assume that AWC's bonds, if rated, would likely be rated no better than Baa/BBB by Moody's and S&P. Hence, an upward credit risk adjustment is necessary to reflect the lower credit risk, i.e., Baa2 (middle of Moody's Baa bond/issuer rating category), of AWC relative to the A2/A3 average Moody's bond rating of the proxy group of eight publicly traded water companies, as shown on page 5 of Exhibit PMA-7.

An indication of the magnitude of the necessary upward adjustment to reflect the greater credit risk inherent in a Baa2 bond rating is five-sixths of a recent three-month average spread between Moody's A and Baa2 rated public utility bond yields of 0.76%, shown on page 4 of Exhibit PMA-7, or 0.63% (0.63% = 0.76% * (5/6)).

B. Business Risk Adjustment

Q. IS THERE A WAY TO QUANTIFY AN ADJUSTMENT DUE TO AWC'S GREATER BUSINESS RISK RELATIVE TO THE PROXY GROUP OF EIGHT PUBLICLY TRADED WATER COMPANIES?

A. Yes, the available empirical evidence on the effect of AWC's small size relative to the proxy group, provides insight into the magnitude of such an adjustment. As discussed above, increased risk due to small size must be taken into account in the cost of common equity, consistent with the financial principle of risk and return. Since the Company is smaller in size relative to the proxy group, it has greater business risk than the average company in the proxy group.

SBBI – 2015 discusses the nature of the small size phenomenon, providing an indication of the magnitude of the size premium for the deciles of the NYSE/AMEX/NASDAQ-listed securities. In discussing "Aspects of the Company Size Effect," SBBI-2015 states[29]:

> The company size phenomenon is remarkable in several ways. First, the greater risk of small stocks does not, in the context of the capital asset pricing model, fully account for their higher returns over the long term. In the CAPM, only systematic, or beta risk, is rewarded; small company stocks have had returns in excess of those implied by their betas.

Furthermore, in "The Capital Asset Pricing Model: Theory and Evidence,"[30] Fama and French note that size is indeed a risk factor which must be reflected when estimating the cost of common equity. On page 14, they note:

> . . . the higher average returns on small stocks and high book-to-market stocks reflect unidentified state variables that produce undiversifiable risks (covariance's) in returns not capture in the market return and are priced separately from market betas.

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[29] SBBI – 2015 99.

[30] Eugene F. Fama and Kenneth R. French, "The Capital Asset Pricing Model: Theory and Evidence," *Journal of Economic Perspectives*, Volume 18, Number 3, Summer 2004, 25-43.

Based upon this evidence, Fama and French proposed their three-factor model which includes a size variable in recognition of the effect of size on the cost of common equity.

In view of all of the foregoing, adding a business risk adjustment of 0.50%, coupled with a credit risk adjustment of 0.63%, to the 9.60% indicated common equity cost rate based upon the eight publicly traded water companies, results in a business risk-adjusted common equity cost rate of 10.73%[31], which, when rounded to 10.75%, is my recommended common equity cost rate.

In my opinion, a common equity cost rate of 10.75%, which results in an overall rate of return of 8.93%, is both reasonable and conservative given AWC's above-normal and increasing capital requirements related to the replacement of aging infrastructure, its inability to earn its authorized ROE when sales decline, and the relative impact of SDWA compliance.

A common equity cost rate of 10.75% is consistent with the *Hope* and *Bluefield* standards of a fair and reasonable return which ensures the integrity of presently invested capital and enables the attraction of needed new capital on reasonable terms. It also ensures the continued reliability and quality of service to the benefit of ratepayers. Thus, it balances the interests of both ratepayers and the Company.

Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

---

[31] 10.75% (rounded) = 9.60% + 0.63% + 0.50%.

APPENDIX A

PROFESSIONAL QUALIFICATIONS

OF

PAULINE M. AHERN, CRRA
PARTNER

SUSSEX ECONOMIC ADVISORS, LLC

PROFESSIONAL QUALIFICATIONS
OF
PAULINE M. AHERN, CRRA
PARTNER
SUSSEX ECONOMIC ADVISORS, LLC

PROFESSIONAL EXPERIENCE

2015-Present

In 2015, I joined Sussex Economic Advisors, LLC as a partner. I am responsible for providing testimony as an expert witness on subjects of fair rate of return, cost of capital and related issues before public utility regulatory commissions. I also provide assistance and support to clients throughout the entire ratemaking litigation process.

I continue to be responsible for maintaining and calculating the performance of the AGA Index, a market capitalization weighted index of the common stocks of the approximately 70 corporate members of the AGA, which serves as the benchmark for the AGA Gas Utility Index Fund.

As a Partner, I am also involved in strategic planning for Sussex Economic Advisors, LLC.

1994-2015

In 2014, I became a Managing Principal of AUS Consultants responsible for continuing to manage the consulting practice, in addition to providing testimony as an expert witness as described below. I am also a Vice President of AUS Inc.

In 1996, I became a Principal of AUS Consultants, continuing to offer testimony as an expert witness on the subjects of fair rate of return, cost of capital and related issues before state public utility commissions. I provide assistance and support to clients throughout the entire ratemaking litigation process. In addition, I supervise the financial analyst and administrative staff in the preparation of fair rate of return and cost of capital exhibits which are filed along with expert testimony before various state and federal public utility regulatory bodies. The team also assists in the preparation of interrogatory responses, as well as rebuttal exhibits.

As the Publisher of AUS Utility Reports (formerly C. A. Turner Utility Reports), I am responsible for the production, publishing, and distribution of the reports. AUS Utility Reports provides financial data and related ratios for about 80 public utilities, i.e., electric, combination gas and electric, natural gas distribution, natural gas transmission, telephone, and water utilities, on a monthly, quarterly and annual basis. Among the subscribers of AUS Utility Reports are utilities, many state regulatory commissions, federal agencies, individuals, brokerage firms, attorneys, as well as public and academic libraries. The publication has continuously provided financial statistics on the utility industry since 1930.

I am also responsible for maintaining and calculating the performance of the AGA Index, a market capitalization weighted index of the common stocks of the

approximately 70 corporate members of the AGA, which serves as the benchmark for the AGA Gas Utility Index Fund.

As an Assistant Vice President from 1994 - 1996, I prepared fair rate of return and cost of capital exhibits which were filed along with expert testimony before various state and federal public utility regulatory bodies. These supporting exhibits include the determination of an appropriate ratemaking capital structure and the development of embedded cost rates of senior capital. The exhibits also support the determination of a recommended return on common equity through the use of various market models, such as, but not limited to, Discounted Cash Flow analysis, Capital Asset Pricing Model and Risk Premium Methodology, as well as an assessment of the risk characteristics of the client utility. I also assisted in the preparation of responses to any interrogatories received regarding such testimonies filed on behalf of client utilities. Following the filing of fair rate of return testimonies, I assisted in the evaluation of opposition testimony in order to prepare interrogatory questions, areas of cross-examination, and rebuttal testimony. I also evaluated and assisted in the preparation of briefs and exceptions following the hearing process. I also submitted testimony before state public utility commissions regarding appropriate capital structure ratios and fixed capital cost rates.

1990-1994

As a Senior Financial Analyst, I supervised two analysts and assisted in the preparation of fair rate of return and cost of capital exhibits which are filed along with expert testimony before various state and federal public utility regulatory bodies. The team also assisted in the preparation of interrogatory responses.

I evaluated the final orders and decisions of various commissions to determine whether further actions were warranted and to gain insight which assisted in the preparation of future rate of return studies.

I assisted in the preparation of an article authored by Frank J. Hanley and A. Gerald Harris entitled "Does Diversification Increase the Cost of Equity Capital?" published in the July 15, 1991 issue of Public Utilities Fortnightly.

In 1992, I was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the National Society of Rate of Return Analysts (now the Society of Utility and Regulatory Financial Analysts (SURFA)). This designation is based upon education, experience and the successful completion of a comprehensive examination.

As Administrator of Financial Analysis for AUS Utility Reports, which then reported financial data for over 200 utility companies with approximately 1,000 subscribers, I oversaw the preparation of this monthly publication, as well as the accompanying annual publication, Financial Statistics - Public Utilities.

1988-1990

As a Financial Analyst, I assisted in the preparation of fair rate of return studies including capital structure determination, development of senior capital cost rates, as well as the determination of an appropriate rate of return on equity. I also assisted in the preparation of interrogatory responses, interrogatory questions of the opposition,

areas of cross-examination and rebuttal testimony. I also assisted in the preparation of the annual publication C. A. Turner Utility Reports - Financial Statistics -Public Utilities.

1973-1975

As a Research Assistant in the Research Department of the Regional Economics Division of the Federal Reserve Bank of Boston, I was involved in the development and maintenance of econometric models to simulate regional economic conditions in New England in order to study the effects of, among other things, the energy crisis of the early 1970's and property tax revaluations on the economy of New England. I was also involved in the statistical analysis and preparation of articles for the New England Economic Review. Also, I was Assistant Editor of New England Business Indicators.

1972

As a Research Assistant in the Office of the Assistant Secretary for International Affairs, U.S. Treasury Department, Washington, D.C., I developed and maintained econometric models which simulated the economy of the United States in order to study the results of various alternate foreign trade policies so that national trade policy could be formulated and recommended.

Clients Served

I have offered expert testimony before the following commissions:

Alaska
Arkansas
Arizona
British Columbia
California
Connecticut
Delaware
Florida
Hawaii
Idaho
Illinois
Indiana
Iowa
Kentucky
Louisiana
Maine
Maryland
Michigan
Missouri
Nevada
New Hampshire
New Jersey
New York
North Carolina
Ohio
Pennsylvania
Rhode Island
South Carolina
Virginia
Washington

I have sponsored testimony on fair rate of return and related issues for:

Alpena Power Company
Apple Canyon Utility Company
Applied Wastewater Management, Inc.
Aqua Illinois, Inc.

Aqua New Jersey, Inc.
Aqua North Carolina, Inc.
Aquarion Water Company
Aquarion Water Co. of New Hampshire, Inc.
Arizona Water Company
Artesian Water Company
The Atlantic City Sewerage Company
Audubon Water Company
Bermuda Water Company
Carolina Pines Utilities, Inc.
Carolina Water Service, Inc. of NC
Carolina Water Service, Inc. of SC
Chaparral City Water Company
The Columbia Water Company
The Connecticut Water Company
Consumers Illinois Water Company
Consumers Maine Water Company
Consumers New Jersey Water Company
Corix Utilities
City of DuBois, Pennsylvania
Elizabethtown Water Company
Emporium Water Company
EPCOR Water Arizona, Inc.
Fairbanks Natural Gas LLC
Greenridge Utilities, Inc.
The Borough of Hanover, PA
GTE Hawaiian Telephone Inc.
Illinois American Water Company
Indiana American Water Company
Iowa American Water Company
Jersey Central Power & Light Co.
Lake Wildwood Utilities Corp.
Land'Or Utility Company
Long Island American Water Company
Long Neck Water Company
Louisiana Water Service, Inc.
Maine Water Company
Massanutten Public Service Company
Middlesex Water Company
Missouri Gas Energy
Missouri-American Water Company
Mt. Holly Water Company
Nero Utility Services, Inc.
New Jersey Utilities Association
Aqua Ohio, Inc.
Aqua Virginia, Inc.
The Newtown Artesian Water Company
NRG Energy Center Harrisburg LLC
NRG Energy Center Pittsburgh LLC
Ohio-American Water Company
Penn Estates Utilities
Pinelands Waste Water Company
Pinelands Water Company
Pioneer Water LLC
Pittsburgh Thermal
San Gabriel Valley Water Company
San Jose Water Company
Southland Utilities, Inc.
Spring Creek Utilities, Inc.
Sussex Shores Water Company
Tega Cay Water Services, Inc.
Thames Water Americas
Tidewater Utilities, Inc.
Total Environmental Services, Inc. – Treasure Lake Water & Sewer Divisions
Transylvania Utilities, Inc.
Trigen – Philadelphia Energy Corporation
Twin Lakes Utilities, Inc.
United Utility Companies
United Water Arkansas, Inc.
United Water Arlington Hills Sewerage, Inc.
United Water Connecticut, Inc.
United Water Delaware, Inc.
United Water Great Gorge Inc./United Water
Vernon Transmission, Inc.
United Water Idaho, Inc.
United Water Indiana, Inc.
United Water New Jersey, Inc.
United Water New Rochelle, Inc.
United Water New York, Inc.
United Water Owego/Nichols, Inc.
United Water Pennsylvania, Inc.
United Water Rhode Island, Inc.
United Water South County, Inc.
United Water Toms River, Inc.
United Water Vernon Sewage Inc.

United Water Virginia, Inc.
United Water West Lafayette, Inc.
United Water West Milford, Inc.
United Water Westchester, Inc.
Utilities, Inc.
Utilities Inc. of Central Nevada
Utilities, Inc. of Florida
Utilities, Inc. of Louisiana
Utilities, Inc. of Nevada
Utilities, Inc. of Pennsylvania
Utilities, Inc. - Westgate
Utilities Services of South Carolina
Utility Center, Inc.
Valley Energy, Inc.
Water Services Corp. of Kentucky
Wellsboro Electric Company
Western Utilities, Inc.

I have sponsored testimony on generic/uniform methodologies for determining the return on common equity for:

Aquarion Water Company
The Connecticut Water Company
Corix Multi-Utility Services, Inc.
United Water Connecticut, Inc.
Utilities, Inc.

I have sponsored testimony on the rate of return and capital structure effects of merger and acquisition issues for:

California-American Water Company
New Jersey-American Water Company

I have sponsored testimony on capital structure and senior capital cost rates for the following clients:

Alpena Power Company
Arkansas-Western Gas Company
Associated Natural Gas Company
PG Energy Inc.
United Water Delaware, Inc.
Washington Natural Gas Company

I have sponsored testimony on Distribution System Improvement Charges (DSIC):

Arizona Water Company

I have assisted in the preparation of rate of return studies on behalf of the following clients:

Algonquin Gas Transmission Company
Anadarko Petroleum Corporation
Arizona Water Company
Arkansas-Louisiana Gas Company
Arkansas Western Gas Company
Artesian Water Company
Associated Natural Gas Company
Atlantic City Electric Company
Bridgeport-Hydraulic Company
Cambridge Electric Light Company
Carolina Power & Light Company
Citizens Gas and Coke Utility
City of Vernon, CA
Columbia Gas/Gulf Transmission Cos.
Commonwealth Electric Company
Commonwealth Telephone Company
Conestoga Telephone & Telegraph Co.
Connecticut Natural Gas Corporation
Consolidated Gas Transmission Company

Consumers Power Company
CWS Systems, Inc.
Delmarva Power & Light Company
East Honolulu Community Services, Inc.
Equitable Gas Company
Equitrans, Inc.
Fairbanks Natural Gas, LLC
Florida Power & Light Company
Gary Hobart Water Company
Gasco, Inc.
Great Lakes Gas Transmission L.P.
GTE Arkansas, Inc.
GTE California, Inc.
GTE Florida, Inc.
GTE Hawaiian Telephone
GTE North, Inc.
GTE Northwest, Inc.
GTE Southwest, Inc.
Hawaiian Electric Company
Hawaiian Electric Light Company
IES Utilities Inc.
Illinois Power Company
Interstate Power Company
Interstate Power & Light Co.
Iowa Electric Light and Power Company
Iowa Southern Utilities Company
Kentucky-West Virginia Gas Company
Lockhart Power Company
Middlesex Water Company
Milwaukee Metropolitan Sewer District
Mountaineer Gas Company
National Fuel Gas Distribution Corp.
National Fuel Gas Supply Corp.
Newco Waste Systems of NJ, Inc.
New Jersey Natural Gas Company
New Jersey-American Water Company
New York-American Water Company
North Carolina Natural Gas Corp.
Northumbrian Water Company
Ohio-American Water Company
Oklahoma Natural Gas Company
Orange and Rockland Utilities
Paiute Pipeline Company
PECO Energy Company
Penn Estates Utilities, Inc.
Penn-York Energy Corporation
Pennsylvania-American Water Co.
PG Energy Inc.
Philadelphia Electric Company
Providence Gas Company

South Carolina Pipeline Company
Southwest Gas Corporation
Stamford Water Company
Tesoro Alaska Petroleum Company
Tesoro Refining & Marketing Co.
United Telephone of New Jersey
United Utility Companies
United Water Arkansas, Inc.
United Water Delaware, Inc.
United Water Idaho, Inc.
United Water Indiana, Inc.
United Water New Jersey, Inc.
United Water New York, Inc.
United Water Pennsylvania, Inc.
United Water Virginia, Inc.
United Water West Lafayette, Inc.
Utilities, Inc. of Pennsylvania
Utilities, Inc. - Westgate
Vista-United Telecommunications Corp.
Washington Gas Light Company
Washington Natural Gas Company
Washington Water Power Corporation
Waste Management of New Jersey – Transfer Station A
Wellsboro Electric Company
Western Reserve Telephone Company
Western Utilities, Inc.
Wisconsin Power and Light Company

EDUCATION:

1973 – Clark University – B.A. – Honors in Economics (Concentration: Econometrics and Regional/International Economics)
1991 – Rutgers University – M.B.A. – High Honors (Concentration: Corporate Finance)

PROFESSIONAL AFFILIATIONS:

Advisory Council – Financial Research Institute – University of Missouri – Robert J. Trulaske, Sr. School of Business
Edison Electric Institute – Cost of Capital Working Group
National Association of Water Companies – Member of the Finance/Accounting/Taxation and Rates and Regulation Committees
Society of Utility and Regulatory Financial Analysts
Member, Board of Directors – 2010-2014
President – 2006-2008 and 2008-2010
Secretary/Treasurer – 2004-2006
American Finance Association
Financial Management Association

SPEAKING ENGAGEMENTS:

"Leadership in the Financial Services Sector", Guest Professor – Cost of Capital, Business Leader Development Program, Rutgers University School of Business, May 22, 2015, Camden, NJ.

"ROE: Trends & Analysis", American Gas Association, AGA Mini-Forum for the Financial Analysts Community & Finance Committee Meeting, September 11, 2014, The Princeton Club, New York, NY.

Guest Professor, "Measuring Risk", Asset Supervision and Administration Commission of the State Council of the Peoples' Republic of China, Rutgers School of Business, July 21, 2014, New Brunswick, NJ.

Instructor, "Cost of Capital 101", EPCOR Water America, Inc., Regulatory Management Team, June 9, 2014, Phoenix, AZ.

Moderator: Society of Utility Financial Analysts: 46th Financial Forum – "The Rating Agencies' Perspectives: Regulatory Mechanisms and the Regulatory Compact", April 22-25, 2014, Indianapolis, IN.

"The Return on Equity Debate: Its Impact on Budgeting and Investment and Wall Street's View of Risk", National Association of Water Companies – 2014 Indiana Chapter Water Summit, March 13, 2014, Indianapolis, IN.

"Regulatory Training in Financing, Planning, Strategies and Accounting Issues for Publicly- and Privately-Owned Water and Wastewater Utilities", New Mexico State University Center for Public Utilities, October 13-18, 2013, Instructor (Cost of Capital).

"Regulated Utilities – Access to Capital", (panelist) - Innovation: Changing the Future of Energy, 2013 Deloitte Energy Conference, Deloitte Center for Energy Solutions, May 22, 2013, Washington, DC.

"Comparative Evaluation of the Predictive Risk Premium Model, the Discounted Cash Flow Model and the Capital Asset Pricing Model for Estimating the Cost of Common Equity", (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) – Advanced Workshop in Regulation and Competition, 32nd Annual Eastern Conference of the Center for Research in Regulated Industries (CRRI), May 17, 2013, Rutgers University, Shawnee on the Delaware, PA.

"Decoupling: Impact on the Risk and Cost of Common Equity of Public Utility Stocks", before the Society of Utility and Regulatory Financial Analysts: 45th Financial Forum, April 17-18, 2013, Indianapolis, IN.

"Issues Surrounding the Determination of the Allowed Rate of Return", before the Staff Subcommittee on Electricity of the National Association of Regulatory Utility Commissioners, Winter 2013 Committee Meetings, February 3, 2013, Washington, DC.

"Leadership in the Financial Services Sector", Guest Professor – Cost of Capital, Business Leader Development Program, Rutgers University School of Business, February 1, 2013, Camden, NJ.

"Analyst Training in the Power and Gas Sectors", SNL Center for Financial Education, Downtown Conference Center at Pace University, New York City, December 12, 2012, Instructor (Financial Statement Analysis).

"Regulatory Training in Financing Planning, Strategies and Accounting Issues for Publicly and Privately Owned Water and Wastewater Utilities", New Mexico State University Center for Public Utilities, October 14-19, 2012, Instructor (Cost of Financial

Capital).

"Application of a New Risk Premium Model for Estimating the Cost of Common Equity", Co-Presenter with Dylan W. D'Ascendis, CRRA, AUS Consultants, Edison Electric Institute Cost of Capital Working Group, October 3, 2012, Webinar.

"Application of a New Risk Premium Model for Estimating the Cost of Common Equity", Co-Presenter with Dylan W. D'Ascendis, CRRA, AUS Consultants, Staff Subcommittee on Accounting and Finance of the National Association of Regulatory Commissioners, September 10, 2012, St. Paul, MN.

"Analyst Training in the Power and Gas Sectors", SNL Center for Financial Education, Downtown Conference Center at Pace University, New York City, August 7, 2012, Instructor (Financial Statement Analysis).

"Advanced Regulatory Training in Financing Planning, Strategies and Accounting Issues for Publicly and Privately Owned Water and Wastewater Utilities", New Mexico State University Center for Public Utilities, May 13-17, 2012, Instructor (Cost of Financial Capital).

"A New Approach for Estimating the Equity Risk Premium Applied to Public Utilities", before the Finance and Regulatory Committees of the National Association of Water Companies, March 29, 2012, Telephonic Conference.

"A New Approach for Estimating the Equity Risk Premium Applied to Public Utilities", (co-presenter with Frank J. Hanley, Principal and Director, AUS Consultants) before the Water Committee of the National Association of Regulatory Utility Commissioners' Winter Committee Meetings, February 7, 2012, Washington, DC.

"A New Approach for Estimating the Equity Risk Premium Applied to Public Utilities", (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University and Frank J. Hanley, Principal and Director, AUS Consultants) before the Wall Street Utility Group, December 19, 2011, New York City, NY.

"Advanced Cost and Finance Issues for Water", (co-presenter with Gary D. Shambaugh, Principal & Director, AUS Consultants), 2011 Advanced Regulatory Studies Program – Ratemaking, Accounting and Economics, September 29, 2011, Kellogg Center at Michigan State University – Institute for Public Utilities, East Lansing, MI.

"Public Utility Betas and the Cost of Capital", (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) – Advanced Workshop in Regulation and Competition, 30th Annual Eastern Conference of the Center for Research in Regulated Industries (CRRI), May 20, 2011, Rutgers University, Skytop, PA.

Moderator: Society of Utility and Regulatory Financial Analysts: 43rd Financial Forum – "Impact of Cost Recovery Mechanisms on the Perception of Public Utility Risk", April 14-

15, 2011, Washington, DC.

"A New Approach for Estimating the Equity Risk Premium for Public Utilities", (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) – Hot Topic Hotline Webinar, December 3, 2010, Financial Research Institute of the University of Missouri.

"A New Approach for Estimating the Equity Risk Premium for Public Utilities", (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) before the Indiana Utility Regulatory Commission Cost of Capital Task Force, September 28, 2010, Indianapolis, IN

Tomorrow's Cost of Capital: Cost of Capital Issues 2010, Deloitte Center for Energy Solutions, 2010 Deloitte Energy Conference, "Changing the Great Game: Climate, Customers and Capital", June 7-8, 2010, Washington, DC.

"A New Approach for Estimating the Equity Risk Premium for Public Utilities", (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) – Advanced Workshop in Regulation and Competition, 29th Annual Eastern Conference of the Center for Research in Regulated Industries (CRRI), May 20, 2010, Rutgers University, Skytop, PA

Moderator: Society of Utility and Regulatory Financial Analysts: 42nd Financial Forum – "The Changing Economic and Capital Market Environment and the Utility Industry", April 29-30, 2010, Washington, DC

"A New Model for Estimating the Equity Risk Premium for Public Utilities" (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) – Spring 2010 Meeting of the Staff Subcommittee on Accounting and Finance of the National Association of Regulatory Utility Commissioners, March 17, 2010, Charleston, SC

"New Approach to Estimating the Cost of Common Equity Capital for Public Utilities" (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) - Advanced Workshop in Regulation and Competition, 28th Annual Eastern Conference of the Center for Research in Regulated Industries (CRRI), May 14, 2009, Rutgers University, Skytop, PA

Moderator: Society of Utility and Regulatory Financial Analysts: 41st Financial Forum – "Estimating the
Cost of Capital in Today's Economic and Capital Market Environment", April 16-17, 2009, Washington, DC

"Water Utility Financing: Where Does All That Cash Come From?", AWWA Pre-Conference Workshop: Water Utility Ratemaking, March 25, 2008, Atlantic City, NJ

PUBLICATIONS:

Contributor: The Lawyer's Guide to the Cost of Capital: Understanding Risk and Return for Valuing Businesses and Other Investments, Shannon Pratt and Roger Grabowski, American Bar Association, 2014.

"Comparative Evaluation of the Predictive Risk Premium Model™, the Discounted Cash Flow Model and the Capital Asset Pricing Model", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University, Dylan W. D'Ascendis, and Frank J. Hanley, The Electricity Journal, May, 2013.

"A New Approach for Estimating the Equity Risk Premium for Public Utilities", co-authored with Frank J. Hanley and Richard A. Michelfelder, Ph.D., Rutgers University, The Journal of Regulatory Economics (December 2011), 40:261-278.

"Comparable Earnings: New Life for Old Precept" co-authored with Frank J. Hanley, Financial Quarterly Review, (American Gas Association), Summer 1994.

Arizona Water Company
Table of Contents
to the Financial Supporting Exhibits
of Pauline M. Ahern, CRRA

	Exhibit
Summary of Cost of Capital and Fair Rate of Return	PMA-1
Capital Intensity and Depreciation Rates for Arizona Water Company and the Proxy Group of Eight Water Companies	PMA-2
Financial Profile of Arizona Water Company	PMA-3
Financial Profile of the Proxy Group of Eight Water Companies	PMA-4
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model	PMA-5
Current Institutional Holdings	PMA-6
Indicated Common Equity Cost Rate Using the Risk Premium Model	PMA-7
Indicated Common Equity Cost Rate Using the Capital Asset Pricing Model	PMA-8
Standard & Poor's Cash Flow / Leverage Analysis Ratios	PMA-9

Arizona Water Company
Summary of Cost of Capital and Fair Rate of Return
Based upon the Actual Capital Structure
at Test-Year Ended December 31, 2014

Type Of Capital	Ratios (1)	Cost Rate		Weighted Cost Rate
Long-Term Debt	46.31%	6.82%	(1)	3.16%
Common Equity	53.69%	10.75%	(2)	5.77%
Total	100.00%			8.93%

Notes:

(1) Company provided.
(2) From page 2 of this Exhibit.

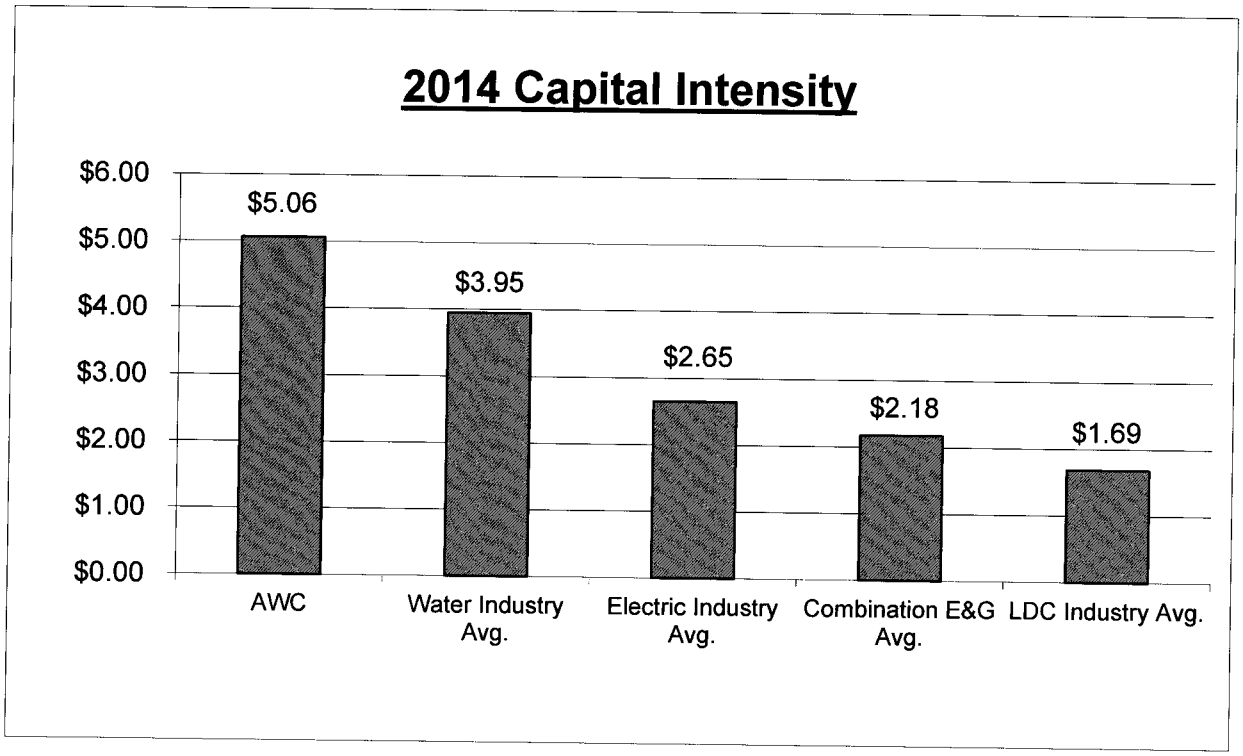
Arizona Water Company
Brief Summary of Common Equity Cost Rate

Line No.	Principal Methods	Proxy Group of Eight Publicly Traded Water Companies
1.	Discounted Cash Flow Model (DCF) (1)	8.64 %
2.	Risk Premium Model (RPM) (2)	10.76
3.	Capital Asset Pricing Model (CAPM) (3)	9.58
4.	Indicated Common Equity Cost Rate before Adjustment for Business Risk	9.60 %
5.	Credit Risk Adjustment (4)	0.63
6.	Business Risk Adjustment (5)	0.50
7.	Indicated Common Equity Cost Rate	10.73
8.	Recommended Common Equity Cost Rate	10.75 %

Notes:
(1) From page 1 of Exhibit PMA-5.
(2) From page 1 of Exhibit PMA-7.
(3) From page 1 of Exhibit PMA-8.
(4) Credit risk adjustment to reflect Arizona Water Company's likely Moody's bond rating of Baa2 relative to the proxy group's average Moody's Bond rating of A2/A3 as detailed in Ms. Ahern's accompany direct testimony.
(5) Business risk adjustment to reflect Arizona Water Company's greater business risk due to its unique riskds as well as small size relative to the proxy group as detailed in Ms. Ahern's accompanying direct testimony.

Arizona Water Company
2014 Capital Intensity of Utilities, Inc. of Central Nevada and
Utility Company Groups and Industry Averages

	Average Net Plant ($ mill)	Total Operating Revenue ($ mill)	Capital Intensity ($)	Capital Intensity Arizona Water Company v. Other Industries (times)
Arizona Water Company	$ 323.66	$ 63.97	$ 5.06	- -
Water Industry Average	$ 2,411.70	$ 611.15	$ 3.95	128.10%
Electric Industry Average	$ 17,004.84	$ 6,422.08	$ 2.65	190.94%
Combination Elec. & Gas Industry Average	$ 16,109.32	$ 7,385.21	$ 2.18	232.11%
Gas Distribution Average	$ 3,842.72	$ 2,271.59	$ 1.69	299.41%

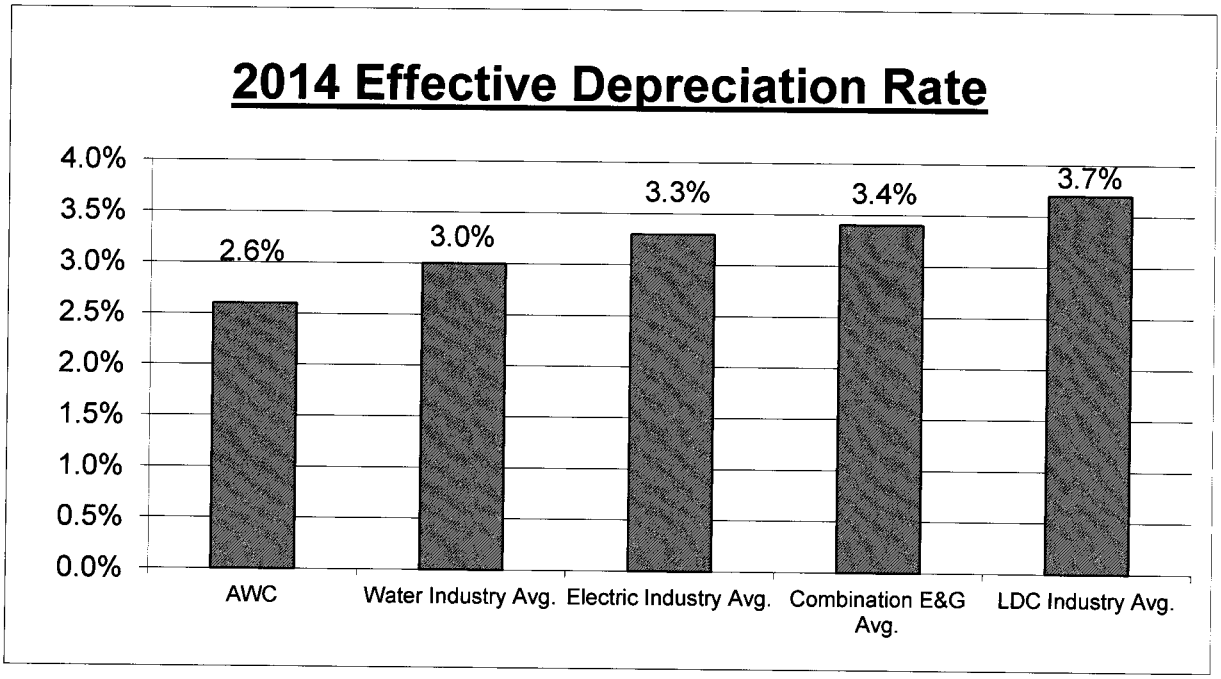


Notes:
Capital Intensity is equal to Average Net Plant divided by Total Operating Revenue.

Source of Information:
Company Annual Forms 10-K
Arizona Water Company's Audited Financial Statements for the year ended December 31, 2014.

Arizona Water Company
2014 Depreciation Rate of Arizona Water Company and
Utility Company Groups and Industry Averages

	Depreciation Depletion & Amort. Expense ($ mill)	Average Total Gross Plant Less CWIP ($ mill)	Depreciation Rate (%)	Depreciation Rate Arizona Water Company v. Other Industries (times)
Arizona Water Company	$ 10.10	$ 382.35	2.6%	- -
Water Industry Average	$ 80.97	$ 2,739.56	3.0%	86.67%
Electric Industry Average	$ 727.38	$ 22,063.71	3.3%	78.79%
Combination Elec. & Gas Industry Average	$ 756.74	$ 22,241.95	3.4%	76.47%
LDC Gas Distribution Industry Average	$ 182.93	$ 4,979.82	3.7%	70.27%



Notes:
Effective Depreciation Rate is equal to Depreciation, Depletion and Amortization Expense divided by average beginning and ending year's Gross Plant minus Construction Work in Progress.

Source of Information:
Company Annual Forms 10-K
Arizona Water Company's Audited Financial Statements for the year ended December 31, 2014.

Exhibit PMA-3

Arizona Water Company
CAPITALIZATION AND FINANCIAL STATISTICS (1)
2010 - 2014, Inclusive

	2014	2013	2012	2011	2010	
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$ 161.959	$ 158.284	$ 152.478	$ 153.221	$ 152.975	
SHORT-TERM DEBT	-	-	-	-	-	
TOTAL-CAPITAL EMPLOYED	$161.959	$158.284	$152.478	$153.221	$152.975	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	6.83 %	6.83 %	6.83 %	6.83 %	6.83 %	
PREFERRED STOCK						
CAPITAL STRUCTURE RATIOS						5 YEAR AVERAGE
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	46.31 %	47.38 %	49.19 %	48.95 %	49.03 %	48.17 %
PREFERRED STOCK	-	-	-	-	-	-
COMMON EQUITY	53.69	52.62	50.81	51.05	50.97	51.83
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	46.31 %	47.38 %	49.19 %	48.95 %	49.03 %	48.17 %
PREFERRED STOCK	-	-	-	-	-	-
COMMON EQUITY	53.69	52.62	50.81	51.05	50.97	51.83
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
DIVIDEND PAYOUT RATIO	57.61 %	29.53 %	111.73 %	94.99 %	114.16 %	81.60 %
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	10.19 %	10.25 %	8.14 %	6.29 %	5.14 %	8.00 %
TOTAL DEBT / EBITDA (3)	2.64 x	2.72 x	3.08 x	3.37 x	3.83 x	3.13 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	29.16 %	26.92 %	23.82 %	23.40 %	18.51 %	24.36 %
TOTAL DEBT / TOTAL CAPITAL	46.31 %	47.38 %	49.19 %	48.95 %	49.03 %	48.17 %
FUNDS FROM OPERATIONS / INTEREST (5)	4.75 x	4.32 x	3.84 x	3.70 x	2.82 x	3.89 x
EBITDA / INTEREST (6)	6.16 x	5.90 x	5.25 x	4.69 x	3.98 x	5.20 x
CASH FLOWS FROM OPERATIONS / TOTAL DEBT (7)	25.76 %	26.44 %	23.66 %	22.87 %	19.65 %	23.68 %
FREE OPERATING CASH FLOW / TOTAL DEBT (8)	4.55 %	9.12 %	7.95 %	10.03 %	12.05 %	8.74 %
DISCRETIONARY CASH FLOWS / TOTAL DEBT (9)	-2.11 %	5.87 %	-1.49 %	3.81 %	6.34 %	2.48 %

Notes:

(1) All capitalization and financial statistics for the group are the arithmetic average of the achieved results for each individual company in the group, and are based upon financial statements as originally reported in each year.

(2) Computed by relating actual total debt interest or preferred stock dividends booked to average of beginning and ending total debt or preferred stock reported to be outstanding.

(3) Total debt relative to EBITDA (Earnings before Interest, Income Taxes, Depreciation and Amortization)

(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) plus interest charges as a percentage of total debt.

(5) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) plus interest charges as a percentage of cash interest.

(6) EBITDA (Earnings before Interest, Income Taxes, Depreciation and Amortization) relative to cash interest.

(7) Cash flows from operations as a percentage of total debt.

(8) Free operating cash flows (cash flows from operations less capital expenditures) as a percentage of total debt.

(9) Discretionary cash flow (free operating cash flow minus all dividend payments) as a percentage of total debt.

Source of Information: Arizona Water Company's Audited Financial Statements.

Proxy Group of Eight Publicly Traded Water Companies
CAPITALIZATION AND FINANCIAL STATISTICS (1)
2010 - 2014, Inclusive

	2014	2013	2012	2011	2010	5 YEAR AVERAGE
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$2,156.407	$2,058.747	$1,998.358	$1,926.369	$1,901.851	
SHORT-TERM DEBT	$72.459	$95.589	$60.594	$89.698	$56.420	
TOTAL CAPITAL EMPLOYED	$2,228.866	$2,154.336	$2,058.952	$2,016.067	$1,958.271	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	5.09 %	5.19 %	5.36 %	5.32 %	5.54 %	
PREFERRED STOCK	5.30 %	5.51 %	5.53 %	5.53 %	5.54 %	
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	45.71 %	46.24 %	49.32 %	50.91 %	50.74 %	48.58 %
PREFERRED STOCK	0.13	0.16	0.18	0.21	0.21	0.18
COMMON EQUITY	54.16	53.60	50.50	48.88	49.05	51.24
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	47.00 %	47.77 %	50.87 %	52.68 %	52.82 %	50.23 %
PREFERRED STOCK	0.13	0.15	0.17	0.19	0.20	0.17
COMMON EQUITY	52.87	52.08	48.96	47.13	46.98	49.60
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	5.44 %	4.84 %	5.47 %	5.19 %	5.18 %	5.22 %
MARKET / AVERAGE BOOK RATIO	212.84	206.33	187.65	181.94	181.79	194.11
DIVIDEND YIELD	2.76	2.91	3.17	3.40	3.39	3.13
DIVIDEND PAYOUT RATIO	52.68	60.11	59.10	66.53	65.70	60.82
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	11.38 %	10.08 %	10.12 %	9.30 %	9.29 %	10.03 %
TOTAL DEBT / EBITDA (3)	3.74 X	3.65 X	3.83 X	4.30 X	4.55 X	4.01 X
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	25.83 %	22.91 %	20.95 %	19.26 %	17.60 %	21.31 %
TOTAL DEBT / TOTAL CAPITAL	47.00 %	47.77 %	50.87 %	52.68 %	52.82 %	50.23 %

Notes:

(1) All capitalization and financial statistics for the group are the arithmetic average of the achieved results for each individual company in the group, and are based upon financial statements as originally reported in each year.

(2) Computed by relating actual total debt interest or preferred stock dividends booked to average of beginning and ending total debt or preferred stock reported to be outstanding.

(3) Total debt relative to EBITDA (Earnings before Interest, Income Taxes, Depreciation and Amortization).

(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) plus interest charges as a percentage of total debt.

Source of Information: Company Annual Forms 10-K

Capital Structure Based upon Total Permanent Capital for the
Proxy Group of Eight Publicly Traded Water Companies
2010 - 2014, Inclusive

	2014	2013	2012	2011	2010	5 YEAR AVERAGE
American States Water Co.						
Long-Term Debt	39.15 %	40.30 %	42.49 %	45.46 %	44.30 %	42.34 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	60.85	59.70	57.51	54.54	55.70	57.66
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
American Water Works Co., Inc.						
Long-Term Debt	52.70 %	52.42 %	54.30 %	55.72 %	56.73 %	54.37 %
Preferred Stock	0.15	0.17	0.21	0.27	0.29	0.22
Common Equity	47.15	47.41	45.49	44.01	42.98	45.41
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	49.45 %	50.32 %	53.41 %	54.11 %	57.05 %	52.87 %
Preferred Stock	0.00	0.01	0.01	0.02	0.02	0.01
Common Equity	50.55	49.67	46.58	45.87	42.93	47.12
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Service Group						
Long-Term Debt	40.46 %	42.03 %	50.39 %	52.04 %	52.51 %	47.49 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	59.54	57.97	49.61	47.96	47.49	52.51
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Connecticut Water Service, Inc.						
Long-Term Debt	45.91 %	47.34 %	49.03 %	53.05 %	49.32 %	48.93 %
Preferred Stock	0.20	0.20	0.21	0.30	0.34	0.25
Common Equity	53.90	52.46	50.76	46.65	50.34	50.82
Total Capital	100.01 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Middlesex Water Company						
Long-Term Debt	41.54 %	41.36 %	43.53 %	43.12 %	43.91 %	42.69 %
Preferred Stock	0.71	0.88	1.02	1.06	1.07	0.95
Common Equity	57.75	57.76	55.45	55.82	55.02	56.36
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
SJW Corporation						
Long-Term Debt	51.66 %	51.09 %	55.39 %	56.63 %	53.79 %	53.71 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	48.34	48.91	44.61	43.37	46.21	46.29
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
York Water Company						
Long-Term Debt	44.81 %	45.07 %	45.98 %	47.16 %	48.28 %	46.26 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	55.19	54.93	54.02	52.84	51.72	53.74
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Eight Publicly Traded Water Companies						
Long-Term Debt	45.71 %	46.24 %	49.32 %	50.91 %	50.74 %	48.58 %
Preferred Stock	0.13	0.16	0.18	0.21	0.21	0.18
Common Equity	54.16	53.60	50.50	48.88	49.05	51.24
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Source of Information
Annual Forms 10-K

Arizona Water Company
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for
the Proxy Group of Eight Publicly Traded Water Companies

Proxy Group of Eight Publicly Traded Water Companies	[1] Average Dividend Yield (1)	[2] Value Line Projected Five Year Growth in EPS (2)	[3] Reuters Mean Consensus Projected Five Year Growth Rate in EPS	[4] Zack's Five Year Projected Growth Rate in EPS	[5] Yahoo! Finance Projected Five Year Growth in EPS	[6] Average Projected Five Year Growth in EPS (3)	[7] Adjusted Dividend Yield (4)	[8] Indicated Common Equity Cost Rate (5)
American States Water Co.	2.16 %	6.50 %	5.00 %	5.00 %	5.00 %	5.38 %	2.22 %	7.60 %
American Water Works Co., Inc.	2.53	7.50	7.50	7.40	7.50	7.48	2.62	10.10
Aqua America, Inc.	2.49	8.00	5.00	5.30	5.00	5.83	2.56	8.39
California Water Service Group	2.74	7.50	5.00	5.00	5.00	5.63	2.82	8.45
Connecticut Water Service, Inc.	2.84	6.50	5.00	5.00	5.00	5.38	2.92	8.30
Middlesex Water Company	3.43	5.00	NA	NA	2.70	3.85	3.50	7.35
SJW Corporation	2.54	6.50	NA	NA	14.00	10.25	2.67	12.92
York Water Company	2.54	6.50	NA	NA	4.90	5.70	2.61	8.31
							Average	8.93 %
							Median	8.35 %
							Average of Mean and Median	8.64 %

NA= Not Available
NMF = Not Meaningful Figure

Notes:

(1) Indicated dividend at 05/29/2015 divided by the average closing price of the last 60 trading days ending 05/29/2015 fc each company.

(2) From pages 2 through 9 of this Exhibit.

(3) Average of columns 2 through 5 excluding negative growth rates.

(4) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Co., 2.16% x (1+(1/2 x 5.38%)) = 2.22%.

(5) Column 6 + column 7.

Source of Information:

Value Line Investment Survey
www.reuters.com Downloaded on 05/29/2015
www.zacks.com Downloaded on 05/29/2015
www.yahoo.com Downloaded on 05/29/2015

AMER. STATES WATER NYSE-AWR

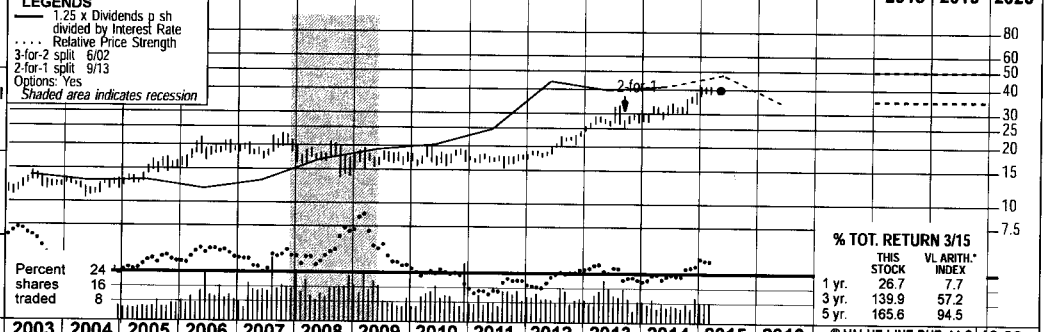
RECENT PRICE 39.76 | P/E RATIO 24.0 (Trailing: 25.5 Median: 21.0) | RELATIVE P/E RATIO 1.24 | DIV'D YLD 2.2% | VALUE LINE

TIMELINESS 3 Lowered 5/16/14
SAFETY 2 Raised 7/20/12
TECHNICAL 2 Raised 4/3/15
BETA .70 (1.00 = Market)

High:	13.4	17.3	21.9	23.1	21.0	19.4	19.8	18.2	24.1	33.1	38.7	41.7
Low:	10.4	12.2	15.1	16.8	13.5	14.9	15.6	15.3	17.0	24.0	27.0	36.9

Target Price Range 2018 | 2019 | 2020

LEGENDS
— 1.25 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 6/02
2-for-1 split 9/13
Options: Yes
Shaded area indicates recession



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+25%)	8%
Low	35	(-10%)	Nil

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	1	0	1
to Sell	0	1	0	0	1	0	3	0	1

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	96	81	99
to Sell	68	86	87
Hld's(000)	23236	23032	23380

% TOT. RETURN 3/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	26.7	7.7
3 yr.	139.9	57.2
5 yr.	165.6	94.5

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
6.45	6.08	6.53	6.89	6.99	6.81	7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	*12.35*	*13.35*	Revenues per sh	*15.35*
1.13	1.10	1.26	1.27	1.04	1.11	1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	*2.65*	*2.70*	*2.80*	"Cash Flow" per sh	*3.70*
.60	.64	.67	.67	.39	.53	.66	.67	.81	.78	.81	1.11	1.12	1.41	1.61	1.57	*1.60*	*1.65*	Earnings per sh A	*2.15*
.43	.43	.43	.44	.44	.44	.45	.46	.48	.50	.51	.52	.55	.64	.76	.83	*.88*	*.93*	Div'd Decl'd per sh B■	*1.12*
2.15	1.51	1.59	1.34	1.88	2.51	2.12	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.90	*2.05*	*2.10*	Cap'l Spending per sh	*2.40*
5.91	6.37	6.61	7.02	6.98	7.51	7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	*13.80*	*14.25*	Book Value per sh	*15.45*
26.87	30.24	30.24	30.36	30.42	33.50	33.60	34.10	34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	*38.00*	*37.50*	Common Shs Outst'g C	*37.50*
17.1	15.9	16.7	18.3	31.9	23.2	21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	22.2	*Bold figures are*		Avg Ann'l P/E Ratio	*20.5*
.97	1.03	.86	1.00	1.82	1.23	1.17	1.50	1.27	1.36	1.41	1.00	.97	.91	.97	1.17	*Value Line*		Relative P/E Ratio	*1.30*
4.2%	4.2%	3.9%	3.6%	3.5%	3.6%	3.1%	2.5%	2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.4%	*estimates*		Avg Ann'l Div'd Yield	*2.7%*
						236.2	268.6	301.4	318.7	361.0	398.9	419.3	466.9	472.1	465.8	*470*	*500*	Revenues ($mill)	*575*
						22.5	23.1	28.0	26.8	29.5	41.4	42.0	54.1	62.7	61.1	*61.0*	*62.5*	Net Profit ($mill)	*80.0*
						47.0%	40.5%	42.6%	37.8%	38.9%	43.2%	41.7%	39.9%	36.3%	38.4%	*38.5%*	*38.0%*	Income Tax Rate	*38.0%*
						--	12.2%	8.5%	6.9%	3.2%	5.8%	2.0%	2.5%	2.5%	*.5%*	*.5%*	*1.0%*	AFUDC % to Net Profit	*2.0%*
						50.4%	48.6%	46.9%	46.2%	45.9%	44.3%	45.4%	42.2%	39.8%	39.1%	*41.0%*	*43.0%*	Long-Term Debt Ratio	*42.0%*
						49.6%	51.4%	53.1%	53.8%	54.1%	55.7%	54.6%	57.8%	60.2%	60.9%	*59.0%*	*57.0%*	Common Equity Ratio	*58.0%*
						532.5	551.6	569.4	577.0	665.0	677.4	749.1	787.0	818.4	832.6	*890*	*935*	Total Capital ($mill)	*1070*
						713.2	750.6	776.4	825.3	866.4	855.0	896.5	917.8	981.5	1003.5	*1060*	*1120*	Net Plant ($mill)	*1240*
						5.4%	6.0%	6.7%	6.4%	5.9%	7.6%	7.1%	8.3%	8.9%	8.6%	*9.0%*	*8.5%*	Return on Total Cap'l	*8.5%*
						8.5%	8.1%	9.3%	8.6%	8.2%	11.0%	10.3%	11.9%	12.7%	12.1%	*11.5%*	*11.5%*	Return on Shr. Equity	*13.0%*
						8.5%	8.1%	9.3%	8.6%	8.2%	11.0%	10.3%	11.9%	12.7%	12.1%	*11.5%*	*11.5%*	Return on Com Equity	*13.0%*
						2.8%	2.7%	3.9%	3.1%	3.2%	5.8%	5.3%	6.6%	6.8%	5.6%	*5.0%*	*5.0%*	Retained to Com Eq	*6.0%*
						67%	67%	58%	64%	61%	47%	49%	45%	47%	53%	*55%*	*56%*	All Div'ds to Net Prof	*52%*

CAPITAL STRUCTURE as of 12/31/14
Total Debt $326.1 mill. **Due in 5 Yrs** $41.6 mill.
LT Debt $325.8 mill. **LT Interest** $21.5 mill.
(LT interest earned: 5.7 x: total interest coverage: 5.4 x) (39% of Cap'l)
Leases, Uncapitalized: Annual rentals $0.4 mill.
Pension Assets-12/14 $140.6 mill. **Oblig.** $185.2 mill.
Pfd Stock None.

Common Stock 38,220,567 shs. **as of 2/23/15**

MARKET CAP: $1.5 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2012	2013	12/31/14
Cash Assets	23.5	38.2	76.0
Other	160.5	153.4	133.5
Current Assets	184.0	191.6	209.5
Accts Payable	40.6	49.8	41.9
Debt Due	3.3	6.3	.3
Other	49.8	44.8	57.1
Current Liab.	93.7	100.9	99.3
Fix. Chg. Cov.	488%	531%	533%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '11-'13 to '18-'20
Revenues	5.5%	6.5%	*4.0%*
"Cash Flow"	7.5%	8.5%	*6.0%*
Earnings	9.0%	13.0%	*6.5%*
Dividends	4.0%	6.5%	*8.0%*
Book Value	5.5%	6.5%	*4.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	107.6	114.3	133.5	111.5	466.9
2013	110.6	120.7	130.9	109.9	472.1
2014	102.0	115.6	138.3	109.9	465.8
2015	*103*	*117*	*140*	*110*	*470*
2016	*105*	*125*	*150*	*120*	*500*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	.27	.40	.49	.26	1.41
2013	.35	.43	.53	.30	1.61
2014	.28	.39	.54	.36	1.57
2015	*.30*	*.45*	*.55*	*.30*	*1.60*
2016	*.31*	*.46*	*.57*	*.31*	*1.65*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.13	.14	.14	.14	.55
2012	.14	.14	.1775	.1775	.64
2013	.1775	.1775	.2025	.2025	.76
2014	.2025	.2025	.213	.213	.83
2015	.213				

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden States Water Company, it supplies water to 258,191 customers in 75 communities and 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to 23,716 customers in the city of Big Bear Lake and in areas of San Bernardino County. Sold Chaparral City Water of Arizona (6/11). Has 707 employees. Blackrock, Inc., owns 9.8% of out. shares; Vanguard, 8.5%; off. & dir. 1.5%. (4/15 Proxy). Chairman: Lloyd Ross. President & CEO: Robert J. Sprowls. Inc: CA. Addr: 630 East Foothill Boulevard, San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

American States Water's earnings growth should be modest through 2016. The company's main subsidiary, Golden State Water Co., has been coming close to earning the allowable return on its common equity for the past two years. Thus, there isn't much room for bottom-line expansion in the near term. All told, we only expect share net to increase 2% this year, followed by a 3% increase in 2016.

Growth in the military business should bolster long-term profits. Through its ASUS subsidiary, the company provides water to nine armed forces bases under six 50-year contracts. This operation, in which returns are not capped by state regulators, has been responsible for 20% to 25% of American States' share earnings. Over the next five years, up to 50 more bases may privatize their water and wastewater systems. As ASUS has performed successfully in this sector, we expect it to win a proportionate amount of these contracts.

Operating in California has not been a negative for the company. Regulators in the state have worked well with the industry in response to the record-breaking drought now plaguing the region. Usually, a decrease in water usage translates into reduced revenues for a utility, making conservation almost not in their interest. In a process known as decoupling, GSWC is allowed to structure fees that result in it not being penalized to incentivize households to use less water. Indeed, over the past six years, water usage has declined 16%-17%. Moreover, California permits utilities to collect increased expenses as they are incurred, not after the fact, as many other state regulators require.

Management believes that a 5% dividend growth rate is sustainable over the next 3- to 5-year period. Though this is below historical levels, the expected increase in the annual payout is not far off the industry average. With the help from nonregulated businesses, we think there is potential upside to this figure.

American Water shares do not stand out for either short- or long-term potential performance. The stock's strong showing has eliminated much of its attractiveness.

James A. Flood *April 17, 2015*

(A) Primary earnings. Excludes nonrecurring gains/(losses): '04, 7¢; '05, 13¢; '06, 3¢; '08, (14¢); '10, (23¢) '11, 10¢. Next earnings report due mid-May. Quarterly earnings may not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for splits.

Company's Financial Strength	A
Stock's Price Stability	85
Price Growth Persistence	70
Earnings Predictability	85

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AMERICAN WATER NYSE-AWK

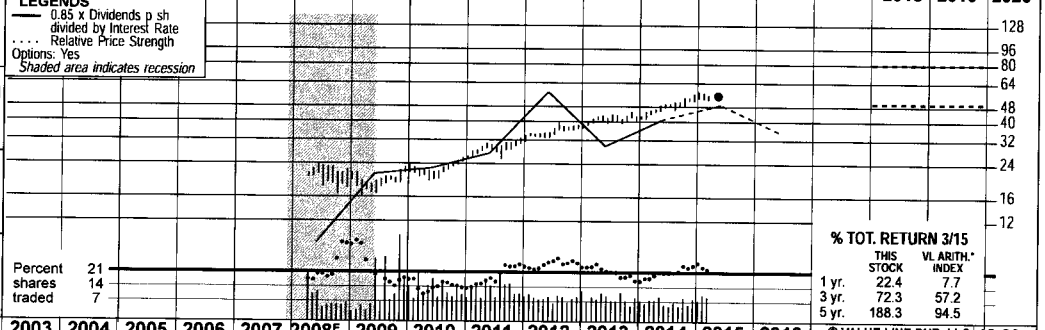
RECENT PRICE 54.68 | P/E RATIO 20.5 (Trailing: 23.0 Median: NMF) | RELATIVE P/E RATIO 1.06 | DIV'D YLD 2.4% | VALUE LINE

TIMELINESS 2 Raised 1/23/15
SAFETY 3 New 7/25/08
TECHNICAL 2 Raised 4/10/15
BETA .70 (1.00 = Market)

High:	23.7	23.0	25.8	32.8	39.4	45.1	56.2	57.5				
Low:	16.5	16.2	19.4	25.2	31.3	37.0	41.1	51.8				

Target Price Range 2018 | 2019 | 2020

LEGENDS
— 0.85 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	80	(+45%)	12%
Low	50	(-10%)	1%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	0	0	0	0	0
Options	3	0	0	4	0	0	3	0	0
to Sell	3	0	0	6	0	0	3	0	0

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	208	206	223
to Sell	194	189	201
Hld's(000)	146101	146606	143322

% TOT. RETURN 3/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	22.4	7.7
3 yr.	72.3	57.2
5 yr.	188.3	94.5

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008E	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
--	--	--	--	--	--	--	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.70	18.50	Revenues per sh	21.40
--	--	--	--	--	--	--	.65	d.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	4.65	5.10	"Cash Flow" per sh	6.15
--	--	--	--	--	--	--	d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.60	2.80	Earnings per sh A	3.25
--	--	--	--	--	--	--	--	--	.40	.82	.86	.91	1.21	.84	1.21	1.33	1.42	Div'd Decl'd per sh B■	1.70
--	--	--	--	--	--	--	4.31	4.74	6.31	4.50	4.38	5.27	5.25	5.50	5.33	5.55	5.55	Cap'l Spending per sh	6.25
--	--	--	--	--	--	--	23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	27.60	29.00	Book Value per sh D	34.55
--	--	--	--	--	--	--	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	179.50	179.50	Common Shs Outst'g C	185.00
--	--	--	--	--	--	--	--	--	18.9	15.6	14.6	16.8	16.7	19.9	20.1	Bold figures are		Avg Ann'l P/E Ratio	20.0
--	--	--	--	--	--	--	--	--	1.14	1.04	.93	1.05	1.06	1.12	1.06	Value Line		Relative P/E Ratio	1.25
--	--	--	--	--	--	--	--	--	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	estimates		Avg Ann'l Div'd Yield	2.6%
						--	2093.1	2214.2	2336.9	2440.7	2710.7	2666.2	2876.9	2901.9	3011.3	3175	3325	Revenues ($mill)	3960
						--	d155.8	d342.3	187.2	209.9	267.8	304.9	374.3	369.3	429.8	465	505	Net Profit ($mill)	600
						--	--	--	37.4%	37.9%	40.4%	39.5%	40.7%	39.1%	39.4%	39.5%	38.5%	Income Tax Rate	37.5%
						--	--	--	--	--	--	--	6.2%	5.1%	1.4%	5.0%	5.0%	AFUDC % to Net Profit	6.0%
						--	56.1%	50.9%	53.1%	56.9%	56.8%	55.7%	53.9%	52.4%	52.4%	53.5%	53.0%	Long-Term Debt Ratio	55.0%
						--	43.9%	49.1%	46.9%	43.1%	43.2%	44.2%	46.1%	47.6%	47.4%	46.5%	47.0%	Common Equity Ratio	45.0%
						--	8692.8	9245.7	8750.2	9289.0	9561.3	9580.3	9635.5	9940.7	10363.8	10955	11500	Total Capital ($mill)	13300
						--	8720.6	9318.0	9991.8	10524	11059	11021	11739	12391	13029.3	13600	14250	Net Plant ($mill)	15000
						--	NMF	NMF	3.7%	3.8%	4.4%	4.8%	5.4%	5.1%	5.5%	5.0%	5.5%	Return on Total Cap'l	6.0%
						--	NMF	NMF	4.6%	5.2%	6.5%	7.2%	8.4%	7.8%	8.7%	8.5%	8.5%	Return on Shr. Equity	9.0%
						--	NMF	NMF	4.6%	5.2%	6.5%	7.2%	8.4%	7.8%	8.7%	8.5%	8.5%	Return on Com Equity	9.0%
						--	NMF	NMF	3.0%	1.8%	2.8%	3.5%	3.6%	4.7%	4.3%	4.0%	4.5%	Retained to Com Eq	4.5%
						--	--	--	34%	65%	56%	52%	57%	40%	51%	53%	51%	All Div'ds to Net Prof	51%

CAPITAL STRUCTURE as of 12/31/14
Total Debt $5959.3 mil. **Due in 5 Yrs** $1294.5 mil.
LT Debt $5448.2 mil. **LT Interest** $278.0 mil.
(Total interest coverage: 3.0x) (53% of Cap'l)

Leases, Uncapitalized: Annual rentals $14.0 mill.
Pension Assets 12/14 $1428.2 mill
Oblig. $1746.5 mill.
Pfd Stock $17.2 mill. **Pfd Div'd** $.5 mill

Common Stock 179,787,780 shs.
as of 2/19/2015

MARKET CAP: $9.8 billion (Large Cap)

CURRENT POSITION ($MILL.)	2012	2013	12/31/14
Cash Assets	24.4	27.0	23.1
Other	475.0	523.3	638.3
Current Assets	499.4	550.3	661.4
Accts Payable	279.6	264.1	285.8
Debt Due	385.9	644.5	511.1
Other	329.3	326.9	444.1
Current Liab.	994.8	1235.5	1241.0
Fix. Chg. Cov.	297%	307%	300%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '11-'13 to '18-'20
Revenues	--	3.0%	4.5%
"Cash Flow"	--	32.5%	6.0%
Earnings	--	--	7.5%
Dividends	--	--	8.0%
Book Value	--	-.5%	5.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	618.5	745.6	831.8	681.0	2876.9
2013	636.1	724.3	829.2	712.3	2901.9
2014	679.0	754.8	846.1	731.4	3011.3
2015	700	805	880	790	3175
2016	735	840	920	830	3325

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	.28	.66	.87	.30	2.11
2013	.32	.57	.84	.33	2.06
2014	.39	.62	.86	.52	2.39
2015	.45	.70	1.00	.45	2.60
2016	.50	.75	1.05	.50	2.80

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.22	.23	.23	.23	.91
2012	.23	.23	.25	.50	1.21
2013	--	.28	.28	.28	.84
2014	.28	.31	.31	.31	1.21
2015	.31				

BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to over 15 million people in over 47 states and Canada. (Regulated presence in 16 states.) Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 88.8% of 2014 revenues. New Jersey is its largest market accounting for 22.7% of regulated revenues. Has roughly 6,400 employees. BlackRock, Inc., owns 10.0% of outstanding shares; Vanguard, 6.3%; officers & directors, less than 1.0%. (4/14 Proxy). Pres. & CEO: Susan Story. Chairman: George Mackenzie. Addr.: 1025 Laurel Oak Road, Voorhees, NJ 08043. Tel.: 856-346-8200. Internet: www.amwater.com.

American Water Works recently completed another successful year. Thanks to a strong fourth quarter, the company posted a hefty 16% year-over-year share-net gain in 2014.

We expect this trend to continue. One of the strengths of American Water is in its ability to make many small tuck-in acquisitions and integrate them into existing operations. In addition to the synergies realized from these purchases, management continues to place a significant emphasis on driving down costs. (Last year's key expense ratio fell from 38.5% to 36.7%.) Since, like most members of this industry, the company needs to make large expenditures to improve its infrastructure, it will have to spend roughly $1 billion annually for the foreseeable future. Higher investment increases American Water's assets that it is allowed to earn a return on. Though comparison with last year's impressive results will be difficult, we expect the company to record healthy earnings-per-share gains of 8% in both 2015 and 2016.

American Water stands out in comparison to most of its peers. For starters, this is a market in which size matters. AWK's market capitalization represents more than half that of all of the nine stocks in this industry combined. As smaller municipally-run water districts realize that they don't have the financial wherewithal required to maintain their systems, American Water should be the main beneficiary. As the largest buyer of pipes, meters, etc., it is able to get better pricing. Moreover, being so diversified geographically, the utility already is familiar with all federal and state regulations.

The balance sheet should remain about average. American Water probably won't be able to generate sufficient cash to cover its large construction budget through late decade. So, more debt will be required. As a result, we don't expect the Financial Strength rating to be raised.

These shares are ranked to outperform the market averages in the year ahead. But despite all of the company's positive attributes, the equity's total return potential through 2016-2018 is below average for the typical stock in the *Value Line* universe.

James A. Flood *April 17, 2015*

(A) Diluted earnings. Excludes nonrecurring losses: '08, $4.62; '09, $2.63; '11, $0.07. Discontinued operations: '06, ($0.04); '11, $0.03; '12, ($0.10); '13,($0.01); '14, ($0.05). Next earnings report due early May. Quarterly earnings may not sum due to rounding. (B) Dividends paid in March, June, September, and December. ■ Div. reinvestment available. Two payments made in 4th quarter of 2012. (C) In millions. (D) Includes intangibles. In 2014: $1.21 billion, $6.73/share. (E) Pro forma numbers for '06 & '07.

Company's Financial Strength	B+
Stock's Price Stability	100
Price Growth Persistence	85
Earnings Predictability	20

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AQUA AMERICA NYSE-WTR

RECENT PRICE 26.81 | P/E RATIO 21.6 (Trailing: 22.2 Median: 24.0) | RELATIVE P/E RATIO 1.12 | DIV'D YLD 2.6% | VALUE LINE

TIMELINESS 3 Lowered 5/24/13
SAFETY 2 Raised 4/20/12
TECHNICAL 2 Raised 4/3/15
BETA .70 (1.00 = Market)

High:	14.8	23.4	23.8	21.3	17.6	17.2	18.4	19.0	21.5	28.1	28.2	28.1
Low:	11.3	14.0	16.1	15.1	9.8	12.3	13.2	15.4	16.8	20.6	22.4	25.4

2018-20 PROJECTIONS

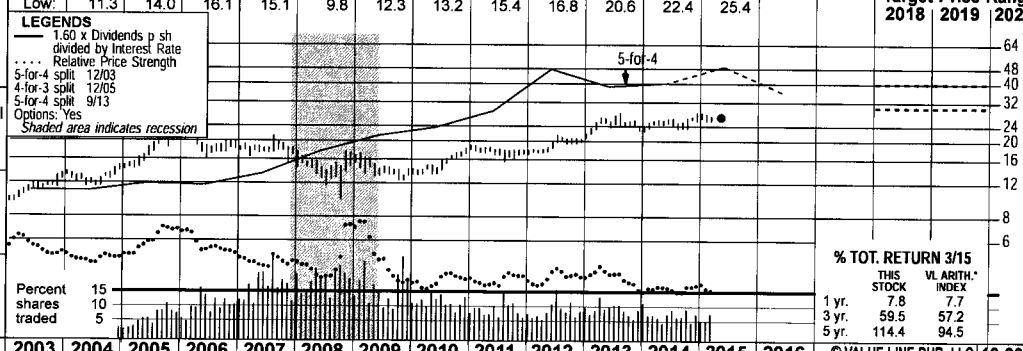
	Price	Gain	Ann'l Total Return
High	40	(+50%)	13%
Low	30	(+10%)	6%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	0	0	0	0	0
Options	2	1	0	1	0	0	2	1	1
to Sell	3	1	1	2	1	2	5	2	2

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	127	139	137
to Sell	133	126	140
Hld's(000)	81999	80311	81382



Target Price Range 2018 | 2019 | 2020

% TOT. RETURN 3/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	7.8	7.7
3 yr.	59.5	57.2
5 yr.	114.4	94.5

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
1.93	1.97	2.16	2.28	2.38	2.78	3.08	3.23	3.61	3.71	3.93	4.21	4.10	4.32	4.32	4.37	*4.55*	*4.70*	Revenues per sh	*5.70*
.58	.61	.69	.76	.77	.87	.97	1.01	1.10	1.14	1.29	1.42	1.45	1.51	1.82	*1.90*	*2.35*	*2.50*	"Cash Flow" per sh	*3.05*
.33	.37	.41	.43	.46	.51	.57	.56	.57	.58	.62	.72	.83	.87	1.16	1.20	*1.25*	*1.30*	Earnings per sh A	*1.65*
.22	.23	.24	.26	.28	.29	.32	.35	.38	.41	.44	.47	.50	.54	.58	.63	*.71*	*.77*	Div'd Decl'd per sh B■	*.98*
.72	.93	.87	.96	1.06	1.23	1.47	1.64	1.43	1.58	1.66	1.89	1.90	1.98	1.73	1.84	*1.95*	*2.00*	Cap'l Spending per sh	*2.00*
2.74	3.08	3.32	3.49	4.27	4.71	5.04	5.57	5.85	6.26	6.50	6.81	7.21	7.90	8.63	9.27	*9.65*	*10.05*	Book Value per sh	*11.40*
133.50	139.78	142.47	141.49	154.31	158.97	161.21	165.41	166.75	169.21	170.61	172.46	173.60	175.43	177.93	178.59	*176.50*	*175.00*	Common Shs Outst'g C	*170.00*
21.2	18.2	23.6	23.6	24.5	25.1	31.8	34.7	32.0	24.9	23.1	21.1	21.3	21.9	21.2	20.2	*Bold figures are*		Avg Ann'l P/E Ratio	*21.5*
1.21	1.18	1.21	1.29	1.40	1.33	1.69	1.87	1.70	1.50	1.54	1.34	1.34	1.39	1.19	1.06	*Value Line*		Relative P/E Ratio	*1.35*
3.0%	3.3%	2.5%	2.5%	2.5%	2.3%	1.8%	1.8%	2.1%	2.8%	3.1%	3.1%	2.8%	2.8%	2.4%	2.6%	*estimates*		Avg Ann'l Div'd Yield	*2.6%*

CAPITAL STRUCTURE as of 12/31/14
Total Debt $1630.7 mill. **Due in 5 Yrs** $436.9 mill.
LT Debt $1560.7 mill. **LT Interest** $70.0 mill.
(Total interest coverage: 3.9x) (49% of Cap'l)

Pension Assets-12/14 232.4 mill. **Oblig.** $281.2 mill.

Pfd Stock None
Common Stock 176,823,519 shares **as of 2/12/15**

MARKET CAP: $4.7 billion (Mid Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
496.8	533.5	602.5	627.0	670.5	726.1	712.0	757.8	768.6	779.9	*800*	*825*	Revenues ($mill)	*970*
91.2	92.0	95.0	97.9	104.4	124.0	144.8	153.1	205.0	213.9	*225*	*230*	Net Profit ($mill)	*280*
38.4%	39.6%	38.9%	39.7%	39.4%	39.2%	32.9%	39.0%	10.0%	*10.5%*	*18.0%*	*20.0%*	Income Tax Rate	*27.0%*
--	--	--	--	--	--	--	--	1.1%	2.4%	*2.0%*	*2.5%*	AFUDC % to Net Profit	*3.0%*
52.0%	51.6%	55.4%	54.1%	55.6%	56.6%	52.7%	52.7%	48.9%	48.5%	*49.5%*	*50.0%*	Long-Term Debt Ratio	*50.0%*
48.0%	48.4%	44.6%	45.9%	44.4%	43.4%	47.3%	47.3%	51.1%	51.5%	*50.5%*	*50.0%*	Common Equity Ratio	*50.0%*
1690.4	1904.4	2191.4	2306.6	2495.5	2706.2	2646.8	2929.7	3003.6	3216.1	*3370*	*3505*	Total Capital ($mill)	*3955*
2280.0	2506.0	2792.8	2997.4	3227.3	3469.3	3612.9	3936.2	4167.3	4402.0	*4550*	*4700*	Net Plant ($mill)	*5000*
6.9%	6.4%	5.9%	5.7%	5.6%	5.9%	6.9%	6.6%	8.0%	*7.5%*	*8.0%*	*7.5%*	Return on Total Cap'l	*8.5%*
11.2%	10.0%	9.7%	9.3%	9.4%	10.6%	11.6%	11.0%	13.4%	12.9%	*13.0%*	*13.0%*	Return on Shr. Equity	*14.5%*
11.2%	10.0%	9.7%	9.3%	9.4%	10.6%	11.6%	11.0%	13.4%	12.9%	*13.0%*	*13.0%*	Return on Com Equity	*14.5%*
4.9%	3.7%	3.2%	2.8%	2.7%	3.7%	4.6%	4.3%	6.7%	6.1%	*5.5%*	*5.5%*	Retained to Com Eq	*6.0%*
56%	63%	67%	70%	72%	65%	60%	61%	50%	53%	*57%*	*53%*	All Div'ds to Net Prof	*59%*

CURRENT POSITION ($MILL.)	2012	2013	12/31/14
Cash Assets	5.5	5.1	4.1
Receivables	92.9	95.4	97.0
Inventory (AvgCst)	11.8	11.4	12.8
Other	150.7	59.8	38.6
Current Assets	260.9	171.7	152.5
Accts Payable	55.5	65.8	60.0
Debt Due	125.4	123.0	70.0
Other	93.3	78.1	95.3
Current Liab.	274.2	266.9	225.3
Fix. Chg. Cov.	413%	388%	389%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '11-'13 to '18-'20
Revenues	6.5%	4.0%	*4.5%*
"Cash Flow"	8.0%	8.0%	*9.5%*
Earnings	8.5%	11.0%	*8.0%*
Dividends	7.5%	7.0%	*9.0%*
Book Value	8.0%	6.0%	*5.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2102	164.0	191.7	214.6	187.5	757.8
2013	180.0	195.7	204.3	188.6	768.6
2014	182.7	195.3	210.5	191.4	779.9
2015	*185*	*200*	*215*	*200*	*800*
2016	*190*	*205*	*220*	*210*	*825*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	.15	.24	.29	.19	.87
2013	.26	.30	.36	.24	1.16
2014	.24	.31	.38	.28	1.20
2015	*.25*	*.32*	*.39*	*.29*	*1.25*
2016	*.26*	*.33*	*.41*	*.30*	*1.30*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.124	.124	.124	.132	.50
2012	.132	.132	.132	.14	.54
2013	.14	.14	.152	.152	.58
2014	.152	.152	.165	.165	.63
2015	.165				

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately three million residents in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Florida, Indiana, and five other states. Has 1,617 employees. Acquired AquaSource, 7/03; Consumers Water, 4/99; and others. Water supply revenues '14: residential, 68%; commercial, 17%; industrial & other, 15%. Officers and directors own .8% of the common stock; Vangurad Group, 6.6%; State Street Capital Corp., 6.3%; Blackrock, Inc, 6.1% (4/14 Proxy). Chairman & Chief Executive Officer: Nicholas DeBenedictis. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Telephone: 610-525-1400. Internet: www.aquaamerica.com.

Aqua America has healthy long-term dividend growth prospects. Based upon our projections of the company's ability to internally generate cash, we estimate that the annual payout may increase roughly 9% per annum through 2018-2020. This is a much higher rate than that of the typical stock in the industry.

Earnings gains will probably moderate both this year and next. Excluding the $0.11-a-share gain from the sale of its operations in Fort Wayne, Aqua's share net rose 3.4% in 2014. Considering that 2013 was an exceptional year, the comparison was actually good. Due to some rate relief, synergies from acquisitions, and the ability to earn returns on capital investments with little regulatory lag, we expect the utility to record 4% bottom-line increases in both 2015 and 2016.

Expansion via acquisitions is a major part of the company's strategy. Most water systems in the U.S. are small and municipally owned. Over the past two decades, Aqua has made over 300 purchases, including 16 in 2014. As these smaller water districts realize that they do not have the finances to modernize their aging infrastructures, they will continue to look toward merging with larger companies. With a significant amount of redundancies, cost savings from synergies can be significant in this industry

Low energy prices could impact nonregulated operations. Hydraulic fracking has become a major presence in Aqua's service areas. With each well requiring five million gallons of water, transporting it by truck is both burdensome and expensive. Extending pipeline systems directly to the wells can be very profitable for water utilities. Revenues from this sector should decline, however, as drillers shut wells until the energy market recovers.

Investors willing to sacrifice some returns for more certainty may like these shares. On the plus side, Aqua America stock has a decent well-protected dividend yield, favorable payout growth prospects, a solid balance sheet, the highest (95) mark for Stock Price Stability, well-defined earnings, and a 2 (Above Average) Safety rank. All told, we believe that the potential total returns are adequate on a risk-adjusted basis.

James A. Flood *April 17, 2015*

(A) Diluted egs. Excl. nonrec. gains (losses): '99, (9¢); '00, 2¢; '01, 2¢; '02, 4¢; '03, 3¢; '12, 18¢. Excl. gain from disc. operations: '12, 7¢; '13, 9¢; '14, 11¢. May not sum due to rounding. Next earnings report due mid-May.
(B) Dividends historically paid in early March, June, Sept. & Dec. ■ Div'd. reinvestment plan available (5% discount).
(C) In millions, adjusted for stock splits.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	60
Earnings Predictability	95

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CALIFORNIA WATER NYSE-CWT

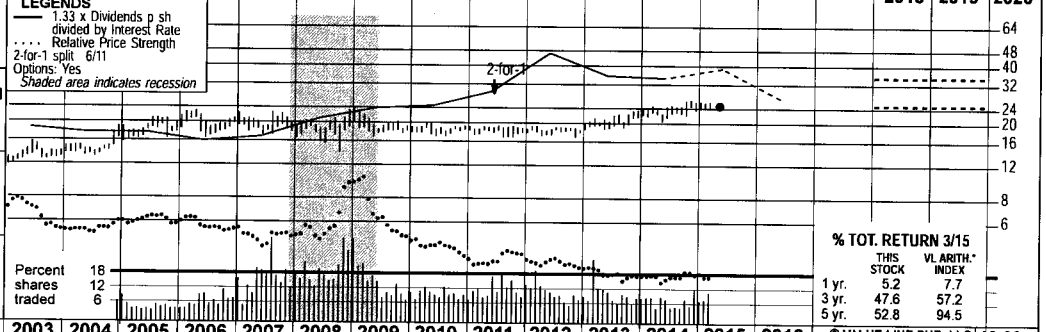
RECENT PRICE 24.76 | P/E RATIO 19.2 (Trailing: 23.1 Median: 20.0) | RELATIVE P/E RATIO 0.99 | DIV'D YLD 2.7% | VALUE LINE

TIMELINESS 3 Raised 6/20/14
SAFETY 3 Lowered 7/27/07
TECHNICAL 2 Raised 4/3/15
BETA .75 (1.00 = Market)

High:	19.0	21.1	22.9	22.7	23.3	24.1	19.8	19.4	19.3	23.4	26.4	26.0
Low:	13.0	15.6	16.4	17.1	13.8	16.7	16.9	16.7	16.8	18.4	20.3	23.6

Target Price Range 2018 | 2019 | 2020

LEGENDS
— 1.33 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 6/11
Options: Yes
Shaded area indicates recession



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+40%)	11%
Low	25	(Nil)	3%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	1	0	0	0	0	0
to Sell	1	0	0	0	0	0	3	2	0

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	57	53	81
to Sell	56	53	59
Hld's(000)	30279	29552	29654

% TOT. RETURN 3/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	5.2	7.7
3 yr.	47.6	57.2
5 yr.	52.8	94.5

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
7.98	8.08	8.13	8.67	8.18	8.59	8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	12.80	13.25	Revenues per sh	16.80
1.37	1.26	1.10	1.32	1.26	1.42	1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.50	2.60	2.65	"Cash Flow" per sh	3.20
.77	.66	.47	.63	.61	.73	.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	1.20	1.20	Earnings per sh A	1.55
.54	.55	.56	.56	.56	.57	.57	.58	.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	Div'd Decl'd per sh B ■	.97
1.72	1.23	2.04	2.91	2.19	1.87	2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.75	2.50	2.60	Cap'l Spending per sh	3.10
6.71	6.45	6.48	6.56	7.22	7.83	7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.54	13.22	13.75	14.25	Book Value per sh C	16.00
25.87	30.29	30.36	30.36	33.86	36.73	36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	48.00	48.00	Common Shs Outst'g D	50.00
17.8	19.6	27.1	19.8	22.1	20.1	24.9	29.2	26.1	19.8	19.7	20.3	21.3	17.9	20.1	19.3	Bold figures are		Avg Ann'l P/E Ratio	20.0
1.01	1.27	1.39	1.08	1.26	1.06	1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.02	Value Line		Relative P/E Ratio	1.25
4.0%	4.3%	4.4%	4.5%	4.2%	3.9%	3.1%	2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%	2.8%	estimates		Avg Ann'l Div'd Yield	3.2%
						320.7	334.7	367.1	410.3	449.4	460.4	501.8	560.0	584.1	597.5	615	635	Revenues ($mill) E	840
						27.2	25.6	31.2	39.8	40.6	37.7	36.1	42.6	47.3	56.7	57.5	57.5	Net Profit ($mill)	77.5
						42.4%	37.4%	39.9%	37.7%	40.3%	39.5%	40.5%	37.5%	30.3%	33.0%	28.5%	29.5%	Income Tax Rate	36.0%
						3.3%	10.6%	8.3%	8.6%	7.6%	4.2%	7.6%	8.0%	4.3%	2.7%	2.0%	4.5%	AFUDC % to Net Profit	5.0%
						48.3%	43.5%	42.9%	41.6%	47.1%	52.4%	51.7%	47.8%	41.6%	40.1%	43.0%	43.5%	Long-Term Debt Ratio	41.5%
						51.1%	55.9%	56.6%	58.4%	52.9%	47.6%	48.3%	52.2%	58.4%	59.9%	57.0%	56.5%	Common Equity Ratio	58.5%
						568.1	670.1	674.9	690.4	794.9	914.7	931.5	908.2	1024.9	1045.9	1160	1215	Total Capital ($mill)	1370
						862.7	941.5	1010.2	1112.4	1198.1	1294.3	1381.1	1457.1	1515.8	1590.4	1660	1730	Net Plant ($mill)	1820
						6.3%	5.2%	5.9%	7.1%	6.5%	5.5%	5.5%	6.3%	6.0%	6.8%	6.5%	6.0%	Return on Total Cap'l	7.0%
						9.3%	6.8%	8.1%	9.9%	9.6%	8.6%	8.0%	9.0%	7.9%	9.0%	9.0%	8.5%	Return on Shr. Equity	9.5%
						9.3%	6.8%	8.1%	9.9%	9.6%	8.6%	8.0%	9.0%	7.9%	9.0%	9.0%	8.5%	Return on Com Equity	9.5%
						2.1%	1.0%	1.8%	3.8%	3.8%	3.0%	2.3%	3.4%	3.4%	4.1%	4.0%	3.5%	Retained to Com Eq	3.5%
						78%	86%	77%	61%	60%	66%	71%	62%	56%	55%	56%	58%	All Div'ds to Net Prof	63%

CAPITAL STRUCTURE as of 12/31/14
Total Debt $504.9 mill. **Due in 5 Yrs** $206.7 mill.
LT Debt $419.2 mill. **LT Interest** $20.0 mill.
(LT interest earned: 4.2x; total int. cov.: 4.0x)
(40% of Cap'l)
Pension Assets-12/14 $306.3 mill.
Oblig. $390.6 mill.
Pfd Stock None

Common Stock 47,800.997 shs.
as of 2/9/15

MARKET CAP: $1.2 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2012	2013	12/31/14
Cash Assets	38.8	27.5	19.6
Other	107.8	112.0	134.5
Current Assets	146.6	139.5	154.1
Accts Payable	46.8	55.1	59.4
Debt Due	136.3	54.7	85.7
Other	59.7	56.8	72.6
Current Liab.	242.8	166.6	217.7
Fix. Chg. Cov.	296%	301%	299%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '11-'13 to '18-'20
Revenues	4.0%	7.0%	5.0%
"Cash Flow"	6.0%	6.5%	5.5%
Earnings	5.5%	4.0%	7.5%
Dividends	1.0%	1.5%	7.0%
Book Value	5.5%	4.5%	5.5%

Cal-endar	QUARTERLY REVENUES ($ mill.)E Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	116.8	143.6	178.1	121.5	560.0
2013	111.4	154.6	184.4	133.7	584.1
2014	110.5	158.4	191.2	137.4	597.5
2015	115	165	195	140	615
2016	120	170	200	145	635

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	.03	.31	.56	.12	1.02
2013	.01	.28	.61	.12	1.02
2014	d.11	.36	.70	.24	1.19
2015	Nil	.32	.73	.15	1.20
2016	Nil	.31	.74	.15	1.20

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.154	.154	.154	.154	.62
2012	.1575	.1575	.1575	.1575	.63
2013	.16	.16	.16	.16	.64
2014	.1625	.1625	.1625	.1625	.65
2015	.1675				

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 477,900 customers in 85 communities in the state of California. Accounts for over 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '14: residential, 68%; business, 19%; industrial, 5%; public authorities, 3%; other 5%. '14 reported depreciation rate: 4.0%. Has 1,105 employees. President, Chairman, and CEO: Peter C. Nelson. Inc.: DE. Address: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.calwatergroup.com.

State regulators (CPUC) have been working well with California Water Services during the region's historic drought. The more water it sells, the more revenues a water utility generates. Due to the ongoing lack of rainfall, the CPUC has implemented "decoupling." This mechanism encourages conservation, without having a major impact on a water utility's profits.

The company had a much better-than-expected fourth quarter. Fueled by rate relief implemented last year and reduced expenses, California Water's earnings per share doubled to $0.24, on a year-over-year basis in the December interim. This resulted in a hefty 17% bottom-line gain in 2014.

We expect profits to be flattish over the next two years. The bulk of the earnings gains resulting from higher rates were reflected in California Water's earnings in 2014. Based on state regulations, California water utilities can only file for adjustments for increased expenses once every three years. With most of the recent cost reductions probably not sustainable, we estimate that the company's share earnings will barely budge from last year's tally of $1.19, and come in at $1.20 for both 2015 and 2016.

The latest dividend hike was a bit of a disappointment. We had been looking for a 4.6% increase in the quarterly payout to $0.17 a share, instead it was only raised by 3.1% to $0.1675.

California Water's finances are in fine shape. The equity-to-total capital ratio was at an industry high of 60% at year-end 2014. Much of this can be attributed to a large equity offering in 2013. Capital expenditures to replace an aging pipleine infrastructure will probably increase in the years ahead. Because of the strong balance sheet, we don't anticipate any major equity offerings out to the late decade. Additional debt may be required, but we believe the utility's financial metrics will remain above the industry averages.

These shares are not of particular interest at this juncture. On the plus side, CWT's yield is higher than most of the stocks in the water industry. Over the pull to 2018-2020, however, the stock has below-average total return potential.

James A. Flood *April 17, 2015*

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (4¢); '01, 2¢; '02, 4¢; '11, 4¢. Next earnings report due mid-May. (B) Dividends historically paid in late Feb., May, Aug., and Nov. ■
Div'd reinvestment plan available.
(C) Incl. intangible assets. In '14 : $7.3 mill., $0.15/sh.
(D) In millions, adjusted for splits.
(E) Excludes non-reg. rev.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	40
Earnings Predictability	90

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CONNECTICUT WATER NDQ-CTWS

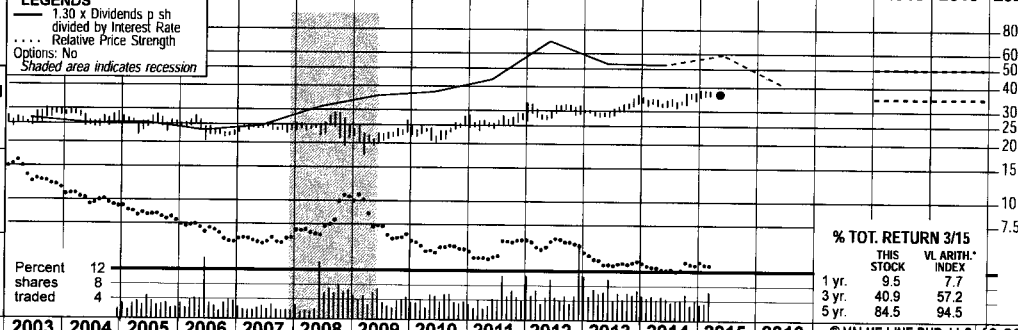
RECENT PRICE 36.82 | P/E RATIO 18.7 (Trailing: 19.2 Median: 22.0) | RELATIVE P/E RATIO 0.97 | DIV'D YLD 2.9% | VALUE LINE

TIMELINESS 3 Lowered 11/21/14
SAFETY 3 New 1/18/13
TECHNICAL 2 Raised 3/27/15
BETA .65 (1.00 = Market)

High:	29.8	28.2	27.7	25.6	29.0	26.4	27.9	29.1	32.8	36.4	37.5	38.6
Low:	23.8	21.9	20.3	22.4	19.3	17.3	20.0	23.3	26.2	27.8	31.0	35.1

Target Price Range 2018 | 2019 | 2020

LEGENDS
— 1.30 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: No
Shaded area indicates recession



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+35%)	10%
Low	35	(-5%)	2%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	40	50	36
to Sell	32	34	46
Hld's(000)	4304	4299	4296

Percent shares traded 12 8 4

% TOT. RETURN 3/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	9.5	7.7
3 yr.	40.9	57.2
5 yr.	84.5	94.5

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
5.87	5.70	5.93	5.77	5.91	6.04	5.81	5.68	7.05	7.24	6.93	7.65	7.93	9.47	8.29	8.45	*8.75*	*9.00*	Revenues per sh	*12.50*
1.65	1.73	1.78	1.78	1.89	1.91	1.62	1.52	1.90	1.95	1.93	2.04	2.11	2.64	2.63	*3.00*	*3.20*	*3.35*	"Cash Flow" per sh	*3.60*
1.03	1.09	1.13	1.12	1.15	1.16	.88	.81	1.05	1.11	1.19	1.13	1.13	1.53	1.66	1.92	*2.00*	*2.10*	Earnings per sh A	*2.25*
.79	.79	.80	.81	.83	.84	.85	.86	.87	.88	.90	.92	.94	.96	.98	1.01	*1.05*	*1.09*	Div'd Decl'd per sh B■	*1.30*
1.42	1.43	1.86	1.98	1.49	1.58	1.96	1.96	2.24	2.44	3.28	3.06	2.61	2.79	3.02	4.11	*4.60*	*4.15*	Cap'l Spending per sh	*2.85*
8.61	8.92	9.25	10.06	10.46	10.94	11.52	11.60	11.95	12.23	12.67	13.05	13.50	20.95	17.92	18.84	*20.10*	*21.15*	Book Value per sh D	*24.15*
7.26	7.28	7.65	7.94	7.97	8.04	8.17	8.27	8.38	8.46	8.57	8.68	8.76	8.85	11.04	11.12	*11.20*	*11.35*	Common Shs Outst'g C	*12.00*
18.2	18.2	21.5	24.3	23.5	22.9	28.6	29.0	23.0	22.2	18.4	20.7	23.0	19.4	18.4	17.7	*Bold figures are*		Avg Ann'l P/E Ratio	*19.0*
1.04	1.18	1.10	1.33	1.34	1.21	1.52	1.57	1.22	1.34	1.23	1.32	1.44	1.23	1.03	.93	*Value Line*		Relative P/E Ratio	*1.20*
4.2%	4.0%	3.3%	3.0%	3.0%	3.1%	3.4%	3.6%	3.6%	3.6%	4.1%	3.9%	3.6%	3.2%	3.2%	3.0%	*estimates*		Avg Ann'l Div'd Yield	*2.8%*
						47.5	46.9	59.0	61.3	59.4	66.4	69.4	83.8	91.5	94.0	*98.0*	*102*	Revenues ($mill)	*150*
						7.2	6.7	8.8	9.4	10.2	9.8	9.9	13.6	18.3	21.3	*23.0*	*24.0*	Net Profit ($mill)	*27.0*
						--	23.5%	32.4%	27.2%	19.5%	35.2%	41.3%	32.0%	28.0%	*14.5%*	*18.0%*	*19.5%*	Income Tax Rate	*30.0%*
						--	--	--	1.7%	--	--	--	1.7%	2.0%	2.4%	*2.5%*	*2.5%*	AFUDC % to Net Profit	*2.0%*
						44.9%	44.4%	47.8%	46.9%	50.6%	49.5%	53.2%	49.0%	46.9%	45.7%	*45.5%*	*47.5%*	Long-Term Debt Ratio	*47.5%*
						54.6%	55.1%	51.8%	52.7%	49.1%	50.2%	46.5%	50.8%	52.9%	54.2%	*54.5%*	*52.5%*	Common Equity Ratio	*52.5%*
						172.3	174.1	193.2	196.5	221.3	225.6	254.2	364.6	373.6	386.8	*420*	*455*	Total Capital ($mill)	*550*
						247.7	268.1	284.3	302.3	325.2	344.2	362.4	447.9	471.9	506.9	*535*	*560*	Net Plant ($mill)	*675*
						5.0%	4.9%	5.5%	5.9%	5.5%	5.4%	4.9%	4.8%	5.9%	*6.4%*	*6.5%*	*6.5%*	Return on Total Cap'l	*6.0%*
						7.5%	6.9%	8.7%	9.0%	9.3%	8.6%	8.3%	7.3%	9.2%	10.2%	*10.0%*	*10.0%*	Return on Shr. Equity	*9.5%*
						7.6%	7.0%	8.7%	9.1%	9.4%	8.7%	8.3%	7.3%	9.2%	10.2%	*10.0%*	*10.0%*	Return on Com Equity	*9.5%*
						.3%	NMF	1.6%	1.9%	2.3%	1.6%	1.4%	2.8%	3.8%	4.5%	*4.5%*	*4.5%*	Retained to Com Eq	*4.0%*
						95%	105%	82%	79%	76%	81%	83%	62%	59%	53%	*53%*	*52%*	All Div'ds to Net Prof	*58%*

CAPITAL STRUCTURE as of 12/31/14
Total Debt $181.0 mill. **Due in 5 Yrs** $19.3 mill.
LT Debt $176.6 mill. **LT Interest** $7.0 mill.
(Total interest coverage: 4.4x)
(46% of Cap'l)
Leases, Uncapitalized: Annual rentals $.1 mill.
Pension Assets-12/14 $61.6 mill.
Oblig. $79.8 mill.

Pfd Stock $0.8 mill. **Pfd Divd** NMF

Common Stock 11,152,627 shs.
as of 3/1/15
MARKET CAP: $400 million (Small Cap)

CURRENT POSITION ($MILL.)	2012	2013	12/31/14
Cash Assets	13.2	18.4	2.5
Accounts Receivable	11.5	12.3	12.0
Other	11.7	16.2	21.7
Current Assets	36.4	46.9	36.2
Accts Payable	10.0	10.8	10.0
Debt Due	3.0	4.1	4.4
Other	2.9	7.8	9.2
Current Liab.	15.9	22.7	23.6
Fix. Chg. Cov.	408%	375%	375%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '11-'13 to '18-'20
Revenues	4.0%	5.0%	*5.5%*
"Cash Flow"	3.0%	6.5%	*5.5%*
Earnings	2.5%	8.0%	*6.5%*
Dividends	1.5%	2.0%	*4.5%*
Book Value	6.0%	8.0%	*4.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	18.5	21.3	24.5	19.5	83.8
2013	19.7	22.6	27.6	21.6	91.5
2014	20.3	25.4	27.6	20.7	94.0
2015	*21.5*	*26.5*	*29.0*	*21.0*	*98.0*
2016	*22.5*	*27.5*	*30.0*	*22.0*	*102.0*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	.22	.47	.67	.16	1.53
2013	.24	.39	.86	.17	1.66
2014	.27	.67	.76	.22	1.92
2015	*.35*	*.60*	*.80*	*.25*	*2.00*
2016	*.36*	*.62*	*.85*	*.27*	*2.10*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.233	.233	.238	.238	.942
2012	.238	.238	.2425	.2425	.962
2013	.2425	.2425	.2475	.2475	.98
2014	.2475	.2475	.2575	.2575	1.01
2015	.2575				

BUSINESS: Connecticut Water Service, Inc. is a non-operating holding company, whose income is derived from earnings of its wholly-owned subsidiary companies (regulated water utilities). In 2014, 93% of net income was derived from these activities. Provides water services to 400,000 people in 77 municipalities throughout Connecticut and Maine. Acquired The Maine Water Company, January, 2012; Biddeford and Saco Water, December, 2012. Incorporated: Connecticut. Has 265 employees. Chairman/President/Chief Executive Officer: Eric W. Thornburg. Officers and directors own 2.3% of the common stock; BlackRock, Inc. 7.0%; (4/15 proxy). Address: 93 West Main Street, Clinton, CT 06413. Telephone: (860) 669-8636. Internet: www.ctwater.com.

Connecticut Water Services will be hard-pressed to repeat last year's impressive performance. Share net rose 16% in 2014, thanks mostly to an agreement with regulators regarding a rebate from the IRS. Still, we estimate that the utility can string together two consecutive solid years in 2015 and 2016. Margins are improving as the company is successfully integrating two acquisitions made in 2012. Moreover, the Biddleford and Saco operation in Maine was recently granted a significant rate increase. As a result, we think Connecticut Water can still grow earnings 4%-5% per annum over the next two years.

Capital expenditures are scheduled to be large in the short term. In addition, to having to replace older pipes (like almost every other water utility), the company has agreed to supply water to two new customers. Funds are being spent to extend the infrastructure in Connecticut to service the town of Mansfield and the University of Connecticut's Storrs campus, which is the size of a small city. Overall, we expect the capital budget to average over $50 million a year through 2016, which represents a 10% increase over the relatively large outlays made in 2014. Starting in 2017, however, construction should take a breather.

The balance sheet is strong enough to handle the increased spending. The equity-to-total capital ratio will most likely decline from its very healthy level of 54.5% to 52.5% by year-end 2016. Despite the dip, this percentage is high for a water utility.

Dividend growth prospects have improved. Over the past five- and 10-year periods, the company has only raised its annual payout by 1.5% and 2.0%, respectively. This rate lagged the industry mean by a wide margin. We expect this gap to narrow substantially in the long term. Indeed, dividend hikes through late decade will probably average 4.5%.

Shares of Connecticut Water do not hold much appeal at their recent price. Despite having a high yield, the stock is expected to only perform in line with the market averages in the year ahead. Potential returns through late decade are even less attractive.

James A. Flood *April 17, 2015*

(A) Diluted earnings. Next earnings report due mid-May. Quarterly earnings do not add in 2012 due to rounding.
(B) Dividends historically paid in mid-March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for split.
(D) Includes intangibles. In 2014: $31.7 million/$2.85 a share.

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	50
Earnings Predictability	85

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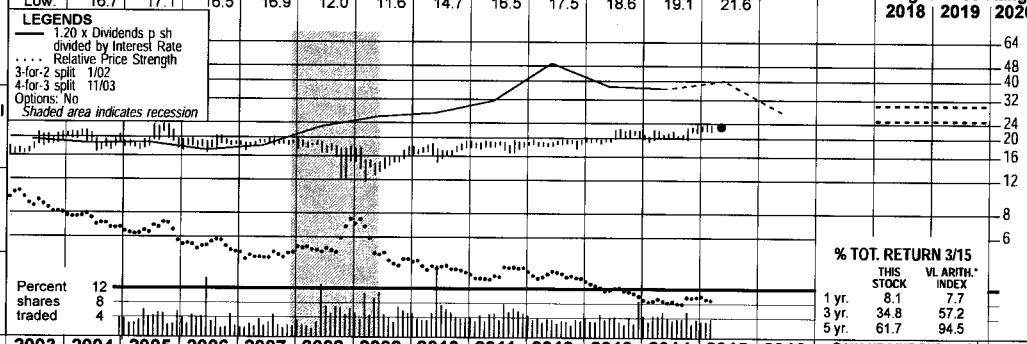
MIDDLESEX WATER NDQ-MSEX

RECENT PRICE 22.97 | P/E RATIO 19.6 (Trailing: 20.3 Median: 21.0) | RELATIVE P/E RATIO 1.02 | DIV'D YLD 3.4% | VALUE LINE

TIMELINESS 3 Lowered 4/11/14
SAFETY 2 New 10/21/11
TECHNICAL 2 Raised 4/3/15
BETA .75 (1.00 = Market)

High:	21.8	23.5	20.5	20.2	19.8	17.9	19.3	19.4	19.6	22.5	23.7	23.5
Low:	16.7	17.1	16.5	16.9	12.0	11.6	14.7	16.5	17.5	18.6	19.1	21.6

LEGENDS
— 1.20 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 1/02
4-for-3 split 11/03
Options: No
Shaded area indicates recession



Target Price Range 2018 | 2019 | 2020

2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+30%)	10%
Low	25	(+10%)	4%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	2	0	0	0	1	0	1	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	1	0	0	0	1	0	0	0	1

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	41	32	39
to Sell	34	40	37
Hld's(000)	6463	6339	6372

Percent shares traded 12 8 4

% TOT. RETURN 3/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	8.1	7.7
3 yr.	34.8	57.2
5 yr.	61.7	94.5

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
5.35	5.39	5.87	5.98	6.12	6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	*7.40*	*7.70*	Revenues per sh	*9.10*
1.19	.99	1.18	1.20	1.15	1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	*1.90*	*1.95*	*2.00*	"Cash Flow" per sh	*2.25*
.76	.51	.66	.73	.61	.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	*1.15*	*1.20*	Earnings per sh A	*1.35*
.60	.61	.62	.63	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	*.77*	*.78*	Div'd Decl'd per sh B■	*.85*
2.33	1.32	1.25	1.59	1.87	2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	*1.80*	*2.00*	Cap'l Spending per sh	*2.00*
6.95	6.98	7.11	7.39	7.60	8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	*12.75*	*13.25*	Book Value per sh	*14.30*
10.00	10.11	10.17	10.36	10.48	11.36	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	*16.25*	*16.25*	Common Shs Outst'g C	*17.00*
17.6	28.7	24.6	23.5	30.0	26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	19.5	*Bold figures are*		Avg Ann'l P/E Ratio	*20.5*
1.00	1.87	1.26	1.28	1.71	1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	1.01	*Value Line*		Relative P/E Ratio	*1.30*
4.4%	4.2%	3.8%	3.7%	3.5%	3.4%	3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.5%	*estimates*		Avg Ann'l Div'd Yield	*3.1%*

CAPITAL STRUCTURE as of 12/31/14
Total Debt $160.9 mill. **Due in 5 Yrs** $49.8 mill.
LT Debt $136.0 mill. **LT Interest** $4.6 mill.
(LT interest earned: 6.0x)
(41% of Cap'l)

Pension Assets-12/14 $51.6 mill.
Oblig. $75.0 mill.
Pfd Stock $2.4 mill. **Pfd Div'd:** $.2 mill.

Common Stock 16,129,050 shs.
as of 2/28/15

MARKET CAP: $375 million (Small Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
74.6	81.1	86.1	91.0	91.2	102.7	102.1	110.4	114.8	117.1	*120*	*125*	Revenues ($mill)	*155*
8.5	10.0	11.8	12.2	10.0	14.3	13.4	14.4	16.6	18.4	*18.6*	*18.6*	Net Profit ($mill)	*23.0*
27.6%	33.4%	32.6%	33.2%	34.1%	32.1%	32.7%	33.9%	34.1%	*35.0%*	*34.5%*	*34.0%*	Income Tax Rate	*34.0%*
--	--	--	--	--	6.8%	6.1%	3.4%	1.9%	*1.0%*	*1.0%*	*1.5%*	AFUDC % to Net Profit	*2.5%*
55.3%	49.5%	49.0%	45.6%	46.6%	43.1%	42.3%	41.5%	40.4%	40.5%	*40.5%*	*42.0%*	Long-Term Debt Ratio	*43.5%*
41.3%	47.5%	49.6%	51.8%	52.1%	55.8%	56.6%	57.4%	58.7%	58.8%	*58.5%*	*57.5%*	Common Equity Ratio	*56.5%*
231.7	264.0	268.8	259.4	267.9	310.5	312.5	316.5	321.4	335.7	*350*	*375*	Total Capital ($mill)	*430*
288.0	317.1	333.9	366.3	376.5	405.9	422.2	435.2	446.5	465.4	*485*	*505*	Net Plant ($mill)	*550*
5.0%	5.1%	5.6%	5.8%	5.0%	5.7%	5.2%	5.4%	5.9%	*6.5%*	*6.5%*	*6.0%*	Return on Total Cap'l	*6.5%*
8.2%	7.5%	8.6%	8.6%	7.0%	8.1%	7.5%	7.8%	8.7%	9.3%	*9.0%*	*9.0%*	Return on Shr. Equity	*9.5%*
8.6%	7.8%	8.7%	8.9%	7.0%	8.2%	7.5%	7.8%	8.7%	9.3%	*9.0%*	*9.0%*	Return on Com Equity	*9.5%*
.6%	1.3%	1.8%	2.0%	.1%	2.1%	1.0%	1.4%	2.4%	3.0%	*3.0%*	*3.0%*	Retained to Com Eq	*3.5%*
94%	84%	79%	78%	98%	75%	87%	83%	73%	67%	*67%*	*65%*	All Div'ds to Net Prof	*63%*

CURRENT POSITION ($MILL.)	2012	2013	12/31/14
Cash Assets	3.0	4.8	2.7
Other	21.6	21.0	20.2
Current Assets	24.6	25.8	22.9
Accts Payable	3.8	6.3	6.4
Debt Due	11.1	33.8	24.9
Other	41.1	12.6	12.6
Current Liab.	56.0	52.7	43.9
Fix. Chg. Cov.	554%	697%	695%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '11-'13 to '18-'20
Revenues	1.5%	1.0%	*6.5%*
"Cash Flow"	3.0%	1.5%	*5.5%*
Earnings	3.5%	1.5%	*5.0%*
Dividends	1.5%	1.5%	*2.0%*
Book Value	4.5%	3.0%	*2.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	23.5	27.4	32.4	27.1	110.4
2013	27.0	29.1	31.3	27.4	114.8
2014	27.1	29.2	32.7	28.1	117.1
2015	*28.0*	*30.0*	*33.0*	*29.0*	*120*
2016	*29.0*	*31.0*	*35.0*	*30.0*	*125*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	.11	.23	.38	.17	.90
2013	.20	.28	.36	.19	1.03
2014	.20	.29	.42	.22	1.13
2015	*.21*	*.31*	*.43*	*.20*	*1.15*
2016	*.22*	*.32*	*.45*	*.21*	*1.20*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.183	.183	.183	.185	.73
2012	.185	.185	.185	.1875	.74
2013	.1875	.1875	.1875	.19	.75
2014	.19	.19	.19	.1925	.76
2015	.1925				

BUSINESS: Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 60,000 retail customers, primarily in Middlesex County, New Jersey. In 2014, the Middlesex System accounted for 60% of operating revenues. At 12/31/14, the company had 282 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.5% of the common stock; BlackRock Institutional Trust Co., 6.6% (4/15 proxy). Add.: 1500 Ronson Road, Iselin, NJ 08830. Tel.: 732-634-1500. Internet: www.middlesexwater.com.

Middlesex Water had a surprisingly good 2014. For the second straight year, the company was able to post a double-digit gain in earnings per share. This was impressive considering that the utility is still in recovery mode following the 2013 loss of two major customers — a Hess refinery and the borough of Sayreville.

Bottom-line gains should moderate. The rate relief that was granted in New Jersey and Delaware will not have as positive an impact on profits as was the case last year. On the positive side, an agreement to distribute water at the Dover Air Force Base (a major military installation) should provide a consistent source of revenues. Overall, we expect Middlesex's 2015 share net to barely rise, from $1.13 to $1.15 in 2015. Next year will probably be better, as we think per-share earnings can increase 4%, to $1.20.

We are not expecting Middlesex to change its remarkably consistent dividend policy through 2016. Since 2004, the utility has raised the payout by exactly $0.01 a share each and every year. With a dividend growth rate of 1.5% over both the past five- and 10-year periods, the company has lagged the industry mean by a substantial margin. When this tradition started, the dividend to net profits percentage was relatively high, meaning there was little room for increases. This figure fell to 57% in 2014, so Middlesex appears to have the flexibility to distribute a greater share of profits to shareholders.

The balance sheet may not be big, but it is strong. At the end of last year, Middlesex's equity-to-total capital ratio was close to 59%, the second highest in the industry. And, while this metric will most likely decline as debt is added to help fund the upgrading of the pipeline network, the utility's finances should remain very sound by late decade.

Middlesex stock has the highest yield of any member in the water industry. At 3.4%, the equity has a payout that is almost 80 basis points above the group average. Indeed, it is the only one that has a yield above 3%. Basically, investors are demanding a premium to own shares in this company. Despite the generous current income, the stock's potential returns through 2018-2020 are still subpar.

James A. Flood *April 17, 2015*

(A) Diluted earnings. May not sum due to rounding. Next earnings report due mid-May.
(B) Dividends historically paid in mid-Feb., May, Aug., and November.■ Div'd reinvestment plan available.
(C) In millions, adjusted for splits.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	40
Earnings Predictability	80

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SJW CORP. NYSE-SJW

RECENT PRICE 30.62 | P/E RATIO 24.3 (Trailing: 12.1 Median: 24.0) | RELATIVE P/E RATIO 1.26 | DIV'D YLD 2.6% | VALUE LINE

TIMELINESS 4 Lowered 12/19/14
SAFETY 3 New 4/22/11
TECHNICAL 2 Raised 3/27/15
BETA .80 (1.00 = Market)

High:	19.6	27.8	45.3	43.0	35.1	30.4	28.2	26.8	26.9	30.1	33.7	35.7
Low:	14.6	16.1	21.2	27.7	20.0	18.2	21.6	20.9	22.6	24.5	25.5	29.8

2018-20 PROJECTIONS

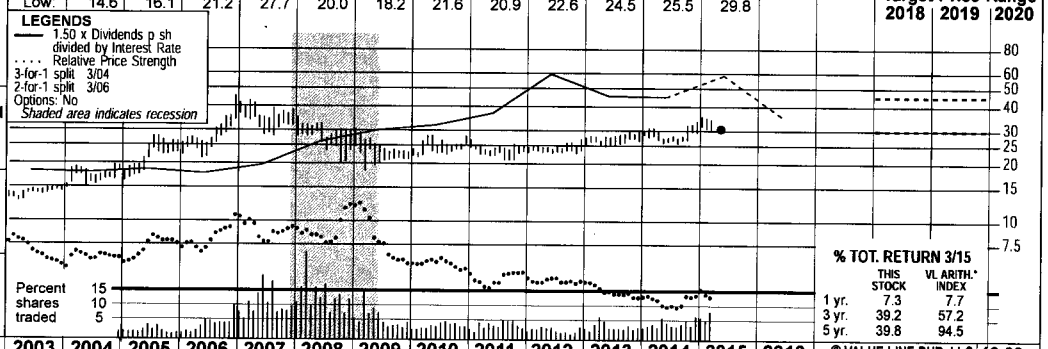
	Price	Gain	Ann'l Total Return
High	45	(+45%)	12%
Low	30	(Nil)	2%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	1	1	0	1	1	0	0	1	0
Options	0	0	0	0	0	0	1	0	0
to Sell	0	0	0	0	1	0	1	0	0

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	45	38	49
to Sell	40	45	47
Hld's(000)	10965	10784	10867



Target Price Range 2018 | 2019 | 2020

% TOT. RETURN 3/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	7.3	7.7
3 yr.	39.2	57.2
5 yr.	39.8	94.5

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
6.40	6.74	7.45	7.97	8.20	9.14	9.86	10.35	11.25	12.12	11.68	11.62	12.85	14.01	13.73	15.76	*14.15*	*14.05*	Revenues per sh	*17.60*
1.43	1.23	1.49	1.55	1.75	1.89	2.21	2.38	2.30	2.44	2.21	2.38	2.80	2.97	2.90	*4.50*	*3.45*	*3.55*	"Cash Flow" per sh	*3.90*
.87	.58	.77	.78	.91	.87	1.12	1.19	1.04	1.08	.81	.84	1.11	1.18	1.12	2.54	*1.35*	*1.40*	Earnings per sh A	*1.75*
.40	.41	.43	.46	.49	.51	.53	.57	.61	.65	.66	.68	.69	.71	.73	.75	*.78*	*.81*	Div'd Decl'd per sh B■	*1.05*
1.77	1.89	2.63	2.06	3.41	2.31	2.83	3.87	6.62	3.79	3.17	5.65	3.75	5.67	4.68	*5.00*	*5.00*	*4.95*	Cap'l Spending per sh	*4.90*
7.88	7.90	8.17	8.40	9.11	10.11	10.72	12.48	12.90	13.99	13.66	13.75	14.20	14.71	15.92	17.75	*18.30*	*19.05*	Book Value per sh	*21.30*
18.27	18.27	18.27	18.27	18.27	18.27	18.27	18.28	18.36	18.18	18.50	18.55	18.59	18.67	20.17	20.29	*20.50*	*21.00*	Common Shs Outst'g C	*23.00*
15.5	33.1	18.5	17.3	15.4	19.6	19.7	23.5	33.4	26.2	28.7	29.1	21.2	20.4	24.3	11.0	*Bold figures are*		Avg Ann'l P/E Ratio	*22.0*
.88	2.15	.95	.94	.88	1.04	1.05	1.27	1.77	1.58	1.91	1.85	1.33	1.30	1.37	.58	*Value Line*		Relative P/E Ratio	*1.40*
3.0%	2.1%	3.0%	3.4%	3.5%	3.0%	2.4%	2.0%	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.7%	*estimates*		Avg Ann'l Div'd Yield	*2.8%*

CAPITAL STRUCTURE as of 12/31/14
Total Debt $398.2 mill. **Due in 5 Yrs** $21.2 mill.
LT Debt $384.4 mill. **LT Interest** $18.1 mill.
(Total interest coverage: 2.9x) (52% of Cap'l)

Leases, Uncapitalized: Annual rentals $5.5 mill.

Pension Assets-12/14 $91.4 mill. **Oblig.** $128.7 mill.

Pfd Stock None.

Common Stock 20,336,409 shs. as of 2/13/15

MARKET CAP: $625 million (Small Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
180.1	189.2	206.6	220.3	216.1	215.6	239.0	261.5	276.9	319.7	*290*	*295*	Revenues ($mill)	*405*
20.7	22.2	19.3	20.2	15.2	15.8	20.9	22.3	23.5	51.8	*27.5*	*29.0*	Net Profit ($mill)	*40.0*
41.6%	40.8%	39.4%	39.5%	40.4%	38.8%	41.1%	41.1%	38.7%	*32.5%*	*37.0%*	*36.0%*	Income Tax Rate	*38.0%*
1.6%	2.1%	2.7%	2.3%	2.0%	--	--	--	2.0%	*1.0%*	*1.0%*	*1.0%*	AFUDC % to Net Profit	*1.5%*
42.6%	41.8%	47.7%	46.0%	49.4%	53.7%	56.6%	55.0%	51.1%	51.6%	*52.5%*	*52.5%*	Long-Term Debt Ratio	*53.5%*
57.4%	58.2%	52.3%	54.0%	50.6%	46.3%	43.4%	45.0%	48.9%	48.4%	*47.5%*	*47.5%*	Common Equity Ratio	*46.5%*
341.2	391.8	453.2	470.9	499.6	550.7	607.9	610.2	656.2	744.6	*790*	*845*	Total Capital ($mill)	*1025*
484.8	541.7	645.5	684.2	718.5	785.5	756.2	831.6	898.7	963.0	*1010*	*1065*	Net Plant ($mill)	*1200*
7.6%	7.0%	5.7%	5.8%	4.4%	4.3%	4.9%	5.0%	5.0%	8.3%	*5.0%*	*5.0%*	Return on Total Cap'l	*5.5%*
10.6%	9.7%	8.2%	8.0%	6.0%	6.2%	7.9%	8.1%	7.3%	14.4%	*7.5%*	*7.5%*	Return on Shr. Equity	*8.0%*
10.6%	9.7%	8.2%	8.0%	6.0%	6.2%	7.9%	8.1%	7.3%	14.4%	*7.5%*	*7.5%*	Return on Com Equity	*8.0%*
5.6%	5.2%	3.5%	3.3%	1.2%	1.2%	3.1%	3.3%	2.8%	10.1%	*3.0%*	*3.0%*	Retained to Com Eq	*3.5%*
47%	46%	57%	59%	80%	80%	61%	59%	62%	28%	*58%*	*58%*	All Div'ds to Net Prof	*59%*

CURRENT POSITION ($MILL.)	2012	2013	12/31/14
Cash Assets	2.5	2.3	2.4
Other	40.4	37.4	65.7
Current Assets	42.9	39.7	68.1
Accts Payable	8.5	12.6	7.0
Debt Due	20.7	23.0	13.8
Other	19.9	23.6	23.9
Current Liab.	49.1	59.2	44.7
Fix. Chg. Cov.	317%	268%	270%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '11-'13 to '18-'20
Revenues	5.5%	4.0%	*4.0%*
"Cash Flow"	6.0%	4.0%	*4.5%*
Earnings	3.5%	.5%	*6.5%*
Dividends	4.5%	3.5%	*5.5%*
Book Value	5.5%	2.5%	*5.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	51.1	65.6	82.4	62.4	261.5
2013	50.1	74.2	85.2	67.4	276.9
2014	54.6	70.4	125.4	69.3	319.7
2015	*56.0*	*73.0*	*89.0*	*72.0*	*290*
2016	*57.0*	*74.0*	*90.0*	*74.0*	*295*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	.06	.28	.53	.31	1.18
2013	.07	.37	.44	.24	1.12
2014	.04	.34	1.88	.28	2.54
2015	*.05*	*.40*	*.53*	*.37*	*1.35*
2016	*.05*	*.40*	*.57*	*.38*	*1.40*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.173	.173	.173	.173	.69
2012	.1775	.1775	.1775	.1775	.71
2013	.1825	.1825	.1825	.1825	.73
2014	.1875	.1875	.1875	.1875	.75
2015	.1950				

BUSINESS: SJW Corporation engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 229,000 connections that serve a population of approximately one million people in the San Jose area and 12,000 connections that serve approximately 36,000 residents in a service area in the region between San Antonio and Austin, Texas. The company offers nonregulated water-related services. Also owns and operates commercial real estate investments. Has about 395 employees. Officers & directors (including Nancy O. Moss) own 27.9% of outstanding shares. Chrm.: Charles J. Toeniskoetter. Inc.: CA. Address: 110 W. Taylor Street, San Jose, CA 95110. Tel.: (408) 279-7800. Int: www.sjwater.com.

SJW's main operating service area is in the midst of an historic drought. The vast majority of the utility's revenues are derived from its water operations in the thriving San Jose area of California. The lack of rain and snow in the mountains has led to the state placing severe restrictions on water usage for conservation purposes. This should result in a steep decline in demand for water. To date, regulators have worked with water utilities using a mechanism know as "decoupling." Basically, this process doesn't meaningfully penalize utilities for encouraging residents to reduce consumption.

SJW's earnings have been skewed. In 2014, the company's profits more than doubled due to a one-time event. The utility received a large payment in the third quarter for past expenses that it was forced to absorb. Since the funds were received as compensation for normal business expenses, we did not classify it as a nonrecurring event.

SJW's bottom line should post decent gains over the next two years. We think that the company's share net can reach $1.35 in 2015. If 2014 had been a normal year, the year-over-year comparison would have been favorable. Next year's per-share earnings will probably only show a modest $0.05-a-share increase to $1.40, however. During 2015 and 2016, opposite forces will be at work pulling the utility's profits in different directions. On the positive side, SJW will be earning a return on the funds spent modernizing its pipeline infrastructure. Conversely, margins may be restrained by the scarcity of surface water, which would force SJW to pay more to either extract more ground water or purchase it from other sources.

The recent dividend increase was adequate. Though the 4% hike was positive in that it was higher than the company's historical growth rate, we thought that there was room for a 5% raise. This would have put the company's growth rate more in line with the industry norm.

These shares are ranked to underperform the broader market averages in the year ahead. Moreover, total return potential over the next three- to five-year period is subpar, as well.

James A. Flood *April 17, 2015*

(A) Diluted earnings. Excludes nonrecurring losses : '03, $1.97; '04, $3.78; '05, $1.09; '06, $16.36; '08, $1.22; '10, $0.46. Next earnings report due mid-May. Quarterly earnings may not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for stock splits.

Company's Financial Strength	B+
Stock's Price Stability	80
Price Growth Persistence	30
Earnings Predictability	70

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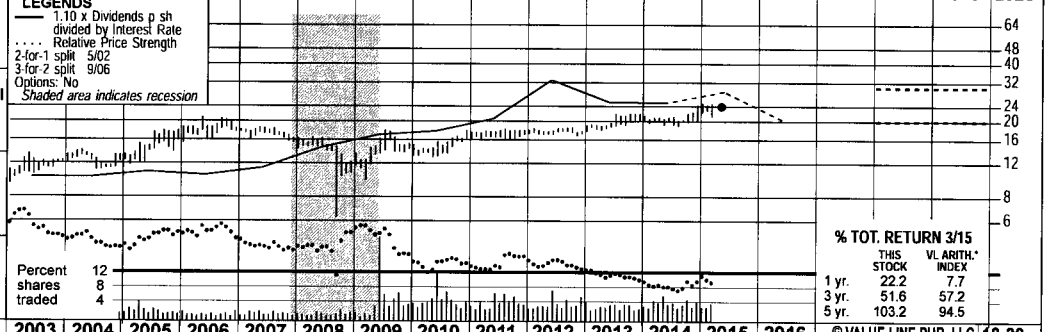
YORK WATER NDQ-YORW

RECENT PRICE 24.01 | P/E RATIO 24.5 (Trailing: 27.0 Median: 25.0) | RELATIVE P/E RATIO 1.27 | DIV'D YLD 2.5% | VALUE LINE

TIMELINESS 3 Raised 3/27/15
SAFETY 2 New 7/19/13
TECHNICAL 2 Lowered 4/17/15
BETA .70 (1.00 = Market)

High:	14.0	17.9	21.0	18.5	16.5	18.0	18.0	18.1	18.5	22.0	24.3	25.0	
Low:	11.0	11.7	15.3	15.5	6.2	9.7	12.8	15.8	16.8	17.6	18.8	21.1	

LEGENDS
— 1.10 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 5/02
3-for-2 split 9/06
Options: No
Shaded area indicates recession



Target Price Range 2018 | 2019 | 2020

2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+25%)	8%
Low	20	(-15%)	-1%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	1	0	4	2	1	4	0	0	4
Options	0	0	0	0	0	0	0	0	0
to Sell	0	1	0	0	0	0	0	0	0

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	29	30	32
to Sell	28	30	24
Hld's(000)	3603	3656	3767

Percent shares traded 12 8 4

% TOT. RETURN 3/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	22.2	7.7
3 yr.	51.6	57.2
5 yr.	103.2	94.5

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
--	--	2.05	2.05	2.17	2.18	2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21	3.27	3.58	3.85	4.00	Revenues per sh	4.75
--	--	.59	.57	.65	.65	.79	.77	.86	.88	.95	1.07	1.09	1.12	1.19	1.35	1.50	1.55	"Cash Flow" per sh	1.75
--	--	.43	.40	.47	.49	.56	.58	.57	.57	.64	.71	.71	.72	.75	.89	.95	1.00	Earnings per sh A	1.15
--	--	.34	.35	.37	.39	.42	.45	.48	.49	.51	.52	.53	.54	.55	.57	.60	.63	Div'd Decl'd per sh B	.79
--	--	.75	.66	1.07	2.50	1.69	1.85	1.69	2.17	1.18	.83	.74	.94	.76	1.10	1.10	1.20	Cap'l Spending per sh	1.15
--	--	3.79	3.90	4.06	4.65	4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.98	8.15	8.15	8.65	Book Value per sh	9.60
--	--	9.46	9.55	9.63	10.33	10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92	12.98	12.83	12.50	12.50	Common Shs Outst'g C	12.00
--	--	17.8	26.9	24.5	25.7	26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4	26.3	23.6	Bold figures are		Avg Ann'l P/E Ratio	22.5
--	--	.91	1.47	1.40	1.36	1.40	1.68	1.61	1.48	1.46	1.32	1.50	1.55	1.48	1.24	Value Line		Relative P/E Ratio	1.40
--	--	4.4%	3.3%	3.2%	3.1%	2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.8%	2.5%	estimates		Avg Ann'l Div'd Yield	3.0%

CAPITAL STRUCTURE as of 12/31/14
Total Debt $84.8 mill. **Due in 5 Yrs** $30.5 mill.
LT Debt $84.8 mill. **LT Interest** $5.1 mill.
(Total interest coverage: 4.0x)
(45% of Cap'l)

Pension Assets 12/14 $30.6 mill.
Oblig. $40.9 mill.

Pfd Stock None

Common Stock 12,837,661 shs.
as of 3/9/14

MARKET CAP: $300 million (Small Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
26.8	28.7	31.4	32.8	37.0	39.0	40.6	41.4	42.4	45.9	48.0	50.0	Revenues ($mill)	57.0
5.8	6.1	6.4	6.4	7.5	8.9	9.1	9.3	9.7	11.5	12.0	12.5	Net Profit ($mill)	14.0
36.7%	34.4%	36.5%	36.1%	37.9%	38.5%	35.3%	37.6%	37.6%	29.8%	29.5%	29.5%	Income Tax Rate	36.5%
--	7.2%	3.6%	10.1%	--	1.2%	1.1%	1.1%	.8%	1.3%	1.5%	1.5%	AFUDC % to Net Profit	1.0%
44.1%	48.3%	46.5%	54.5%	45.7%	48.3%	47.1%	46.0%	45.1%	44.8%	47.5%	47.0%	Long-Term Debt Ratio	48.0%
55.9%	51.7%	53.5%	45.5%	54.3%	51.7%	52.9%	54.0%	54.9%	55.2%	52.5%	53.0%	Common Equity Ratio	52.0%
90.3	126.5	125.7	153.4	160.1	176.4	180.2	184.8	188.4	189.4	195	205	Total Capital ($mill)	220
155.3	174.4	191.6	211.4	222.0	228.4	233.0	240.3	244.2	253.2	260	265	Net Plant ($mill)	280
8.4%	6.2%	6.7%	5.7%	6.2%	6.5%	6.4%	6.4%	6.5%	7.4%	7.5%	7.5%	Return on Total Cap'l	8.0%
11.6%	9.3%	9.5%	9.2%	8.6%	9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	11.5%	Return on Shr. Equity	12.0%
11.6%	9.3%	9.5%	9.2%	8.6%	9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	11.5%	Return on Com Equity	12.0%
3.0%	2.2%	1.7%	1.4%	1.9%	2.7%	2.5%	2.4%	2.4%	4.0%	4.5%	4.5%	Retained to Com Eq	3.5%
74%	77%	82%	85%	78%	72%	73%	74%	74%	64%	63%	63%	All Div'ds to Net Prof	69%

CURRENT POSITION ($MILL.)	2012	2013	12/31/14
Cash Assets	4.0	7.6	1.5
Accounts Receivable	6.4	3.8	4.0
Other	1.2	3.8	5.7
Current Assets	11.6	15.2	11.2
Accts Payable	1.1	1.8	1.6
Debt Due	.1	--	--
Other	4.3	6.0	4.3
Current Liab.	5.5	7.8	5.9
Fix. Chg. Cov.	414%	417%	417%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '11-'13 to '18-'20
Revenues	4.5%	3.0%	5.5%
"Cash Flow"	6.5%	6.5%	6.5%
Earnings	5.5%	5.0%	6.5%
Dividends	4.5%	2.5%	5.0%
Book Value	7.0%	5.0%	3.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	9.6	10.4	11.0	10.4	41.4
2013	10.1	10.7	10.9	10.7	42.4
2014	10.6	11.8	12.0	11.5	45.9
2015	11.0	12.0	12.5	12.5	48.0
2016	11.5	12.5	13.0	13.0	50.0

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	.15	.17	.22	.18	.72
2013	.17	.18	.19	.21	.75
2014	.16	.22	.23	.28	.89
2015	.19	.25	.26	.25	.95
2016	.20	.26	.28	.26	1.00

Cal-endar	QUARTERLY DIVIDENDS PAID B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.131	.131	.131	.131	.524
2012	.134	.134	.134	.134	.535
2013	.138	.138	.138	.138	.552
2014	.1431	.1431	.1431	.1431	.572
2015	.1495	.1495			

BUSINESS: The York Water Company is the oldest investor-owned regulated water utility in the United States. It has operated continuously since 1816. As of December 31, 2014, the company's average daily availability was 35.2 million gallons and its service territory had an estimated population of 190,000. Has more than 65,100 customers. Residential customers accounted for 63% of 2014 revenues; commercial and industrial (29%); other (8%). It also provides sewer billing services. Incorporated: PA. York had 106 full-time employees at 12/31/14. President/CEO: Jeffrey R. Hines. Officers/directors own 1.1% of the common stock (4/15 proxy). Address: 130 East Market Street York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

York Water had a strong finish in 2014. Share earnings came in at $0.28, $0.04 above our fourth-quarter estimate, which was actually a few cents higher than the Wall Street consensus. For the full year, the company was able to post a robust 19% year-over-year increase in the bottom line.

Earnings growth should moderate, but remain solid. The December interim's gains were due to a combination of a lower tax rate, better cost controls, and higher tariffs being in effect. Although the rate relief will not have as large an impact on profits going forward, we still expect York to benefit from a reduced tax burden and a successful cost-containment program. All told, we expect earnings per share to rise 7% this year, to $0.95, and increase by a nickel in 2016, to $1.00.

Capital spending has picked up. As is the case with almost all of its peers, the company is in the process of repairing and modernizing an aging pipeline and wastewater infrastructure. Last year, construction expenditures rose a hefty 40% as management targeted more funds for this purpose. We believe that the budget will remain near this level through the end of the decade.

The balance sheet is strong enough to handle these expenses. At the end of 2014, York's equity-to-total capital ratio stood at 55%, much higher than the industry norm. And, even though we expect this metric to weaken, we estimate that it will still be a healthy 52% in three to five years.

York shares are expected to perform in line with the broader market averages in the year ahead. True, the company's earnings outlook is improving and the stock's yield is 50 basis points higher than the typical stock followed by *Value Line*. However, these positive attributes appear to be already incorporated into the price of the stock. Indeed, the equity's long-term potential returns are unattractive as it is already trading well within our projected 2018-2020 Target Price Range. Those investors seeking safety, current income, and well-defined earnings, as well as good dividend growth, can probably find a better selection in the water utility industry.

James A. Flood *April 17, 2015*

(A) Diluted earnings. Next earnings report due mid-May.
(B) Dividends historically paid in mid-January, April, July, and October.
(C) In millions, adjusted for splits.

Company's Financial Strength	B+
Stock's Price Stability	90
Price Growth Persistence	55
Earnings Predictability	100

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Arizona Water Company
Current Institutional Holdings and Individual Holdings
the Proxy Group of Eight Publicly Traded Water Companies

	[1]	[2]
	May 29, 2015 Percentage of Institutional Holdings	May 29, 2015 Percentage of Individual Holdings (1)
Proxy Group of Eight Publicly Traded Water Companies		
American States Water Co.	70.205 %	29.80 %
American Water Works Co., Inc.	90.234	9.77
Aqua America, Inc.	52.14	47.86
California Water Service Group	73.036	26.96
Connecticut Water Service, Inc.	40.484	59.52
Middlesex Water Company	42.557	57.44
SJW Corporation	59.898	40.10
York Water Company	32.918	67.08
Average	57.68 %	42.32 %

Notes:
(1) (1 - column 1).

Source of Information: Bloomberg Professional, May 29, 2015

Arizona Water Company
Summary of Risk Premium Models for the
Proxy Group of Eight Publicly Traded Water Companies

	Proxy Group of Eight Publicly Traded Water Companies
Predictive Risk Premium Model ™ (PRPM™) (1)	11.59 %
Risk Premium Using an Adjusted Total Market Approach (2)	9.93 %
Average	10.76 %

Notes:
(1) From page 2 of this Exhibit.
(2) From page 3 of this Exhibit.

Arizona Water Company
Proxy Group of Eight Publicly Traded Water Companies
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

Proxy Group of Eight Publicly Traded Water Companies	[1] LT Average Predicted Variance	[2] Spot Predicted Variance	[3] Average Predicted Variance	[4] GARCH Coefficient	[5] Predicted Risk Premium (2)	[6] Risk-Free Rate (3)	[7] Indicated ROE (4)
American States Water Co.	0.39%	0.44%	0.42%	1.66296	8.71%	3.69%	12.40%
American Water Works Co., Inc.	NM	NM	NM	NM	NM	3.69%	NM
Aqua America, Inc.	0.47%	0.32%	0.39%	2.22982	10.95%	3.69%	14.64%
California Water Service Group	0.31%	0.35%	0.33%	1.84347	7.55%	3.69%	11.24%
Connecticut Water Service, Inc.	0.28%	0.25%	0.27%	1.76572	5.87%	3.69%	9.56%
Middlesex Water Company	0.27%	0.33%	0.30%	1.9692	7.32%	3.69%	11.01%
SJW Corporation	0.42%	0.41%	0.42%	1.35495	7.05%	3.69%	10.74%
York Water Company	0.45%	0.38%	0.42%	1.95298	10.30%	3.69%	13.99%
						Average	11.94%
						Median	11.24%
					Average of Mean and Median		11.59%

Notes:

(1) The Predictive Risk Premium Model uses historical data to generate a predicted variance and a GARCH coefficient. The historical data used are the equity risk premiums for the first available trading month as reported by CRSP ® Data® 2012 through May 2015. Center for Research in Security Prices, The University of Chicago Booth School of Business and Bloomberg Professional Service.

(2) (1+(Column [1] * Column [2]) ^12) - 1.

(3) From note 2 of Exhibit PMA-8.

(4) Column [3] + Column [4].

Arizona Water Company
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Eight Publicly Traded Water Companies
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	4.75 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	0.18 (2)
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	4.93 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.13 (3)
5.	Adjusted Prospective Bond Yield	5.06 %
6.	Equity Risk Premium (5)	4.87
7.	Risk Premium Derived Common Equity Cost Rate	9.93 %

Notes: (1) The average forecast of Moody's Aaa Rated Coroprate bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts. (See pages 9 and 10 of this Exhibit. The projection is illustrated below:

Second Quarter 2015	3.80 %
Third Quarter 2015	4.00
Fourth Quarter 2015	4.20
First Quarter 2016	4.40
Second Quarter 2016	4.70
Third Quarter 2016	4.90
2017-2021	5.90
2022-2026	6.10
	4.75 %

(2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.18% from page 4 of this Exhibit.

(3) Adjustment to reflect the A2 / A3 Moody's LT issuer rating of the proxy group of eight publicly traded water companies as shown on page 6 of this Exhibit. The 13 basis point upward adjustment is derived by taking 1/6 of the spread between A2 and A3 Public Utility Bonds (1/6 * 0.76% = 0.13%) as derived from page 4 of this Exhibit.

(4) From page 7 of this Exhibit.

Arizona Water Company
Interest Rates and Bond Spreads for Moody's Corporate and Public Utility Bonds

Selected Bond Yields

	[1] Aaa Rated Corporate Bond	[2] A Rated Public Utility Bond	[3] Baa Rated Public Utility Bond
Mar-15	3.64 %	3.74 %	4.51 %
Apr-15	3.52	3.75	4.51
May-15	3.98	4.17	4.91
Average	3.71 %	3.89 %	4.65 %

Selected Bond Spreads

A Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:

0.18 % (1)

Baa Rated Public Utility Bonds Over A Rated Public Utility Bonds:

0.76 % (2)

Notes:
(1) Column [2] - Column [1].
(2) Column [3] - Column [2].

Source of Information:
Bloomberg Professional Service

Arizona Water Company
Comparison of Long-Term Issuer Ratingsfor the
Proxy Group of Eight Publicly Traded Water Companies

	Moody's Long-Term Issuer Rating May 2015		Standard & Poor's Long-Term Issuer Rating May 2015	
Proxy Group of Eight Publicly Traded Water Companies	Long-Term Issuer Rating	Numerical Weighting(1)	Long-Term Issuer Rating	Numerical Weighting(1)
American States Water Co. (2)	A2	6.0	A+	5.0
American Water Works Co., Inc. (3)	A3	7.0	A-	7.0
Aqua America, Inc. (4)	NR	- -	A+	5.0
California Water Service Group (5)	NR	- -	A+	5.0
Connecticut Water Service, Inc. (6)	NR	- -	A	6.0
Middlesex Water Company	NR	- -	A-	7.0
SJW Corporation (7)	NR	- -	A	6.0
York Water Company	NR	- -	A-	7.0
Average	A2/A3	6.5	A	6.0

Notes:

(1) From page 6 of this Exhibit.
(2) Ratings are those of Golden State Water Company.
(3) Ratings are those of Pennsylvania American Water and New Jersey American Water.
(4) Ratings are those of Aqua Pennsylvania, Inc.
(5) Ratings are those of California Water Service Co.
(6) Ratings are those of Connecticut Water Company.
(7) Ratings are those of San Jose Water Co.

Source Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Numerical Assignment for Moody's and Standard & Poor's Bond Ratings

Moody's Bond Rating	Numerical Bond Weighting	Standard & Poor's Bond Rating
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-
B	14	B+
B2	15	B
B3	16	B-

Arizona Water Company
Judgment of Equity Risk Premium for
the Proxy Group of Eight Publicly Traded Water Companies

Line No.		Proxy Group of Eight Publicly Traded Water Companies
1.	Calculated equity risk premium based on the total market using the beta approach (1)	4.96 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	4.77
3.	Average equity risk premium	4.87 %

Notes: (1) From page 8 of this Exhibit.
(2) From page 11 of this Exhibit.

Arizona Water Company
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
the Proxy Group of Eight Publicly Traded Water Companies

Line No.	Equity Risk Premium Measure	Eight Publicly Traded Water Companies
1.	Ibbotson Equity Risk Premium (1)	5.89 %
2.	Ibbotson Equity Risk Premium based on PRPM™ (2)	6.34
3.	Equity Risk Premium Based on Value Line Summary and Index (3)	5.05
4.	Equity Risk Premium Based on S&P 500 Companies(4)	8.47
5.	Conclusion of Equity Risk Premium (5)	6.44 %
6.	Adjusted Beta (6)	0.77
7.	Forecasted Equity Risk Premium	4.96 %

Notes:

(1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2015 Market Report minus the arithmetic mean monthly yield of Moody's Aaa and Aa corporate bonds from 1926 - 2014. (12.07% - 6.18% = 5.89%).

(2) The Predictive Risk Premium Model (PRPM) is discussed in Ms. Ahern's accompanying direct testimony. The Ibbotson equity risk premium based on the PRPM is derived by applying the PRPM to the monthly risk premiums between Ibbotson large company common stock monthly returns minus the average Aaa and Aa corporate monthly bond yields, from January 1928 through April 2015.

(3) The equity risk premium based on the Value Line Summary and Index is derived from taking the projected 3-5 year total annual market return of 9.80% (described fully Ms. Ahern's direct testimony) and subtracting the average consensus forecast of Aaa corporate bonds of 4.75% (Shown on page 3 of this Exhibit). (9.80% - 4.75% = 5.05%).

(4) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 13.22% was derived based upon expected dividend yields and long-term growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 4.75% results in a expected equity risk premium of 8.47%. (13.22% - 4.75% = 8.47%).

(5) Average of lines 1 through 4.

(6) Average of mean and median beta from Exhibit PMA-8.

Sources of Information:

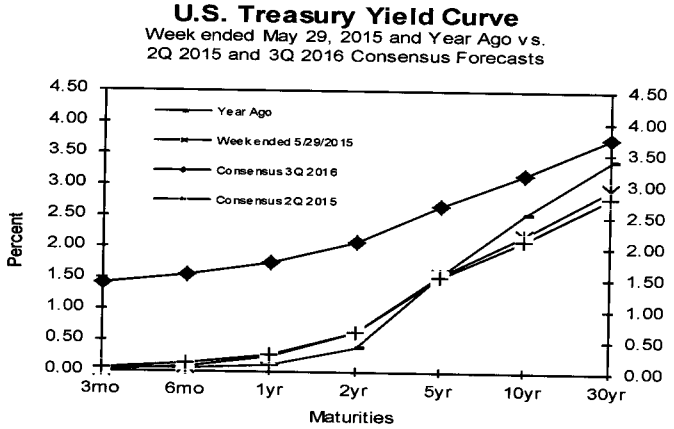
Stocks, Bonds, Bills, and Inflation - Ibbotson® SBBI® 2015 Market Report, Morningstar, Inc., 2015 Chicago, IL.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, June 1, 2015
Bloomberg Professional Services

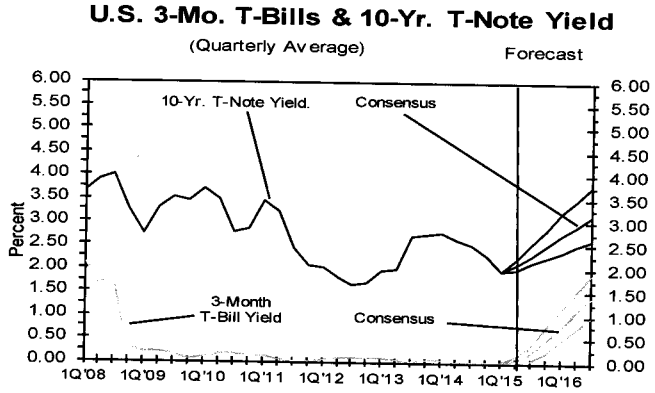
Consensus Forecasts Of U.S. Interest Rates And Key Assumptions[1]

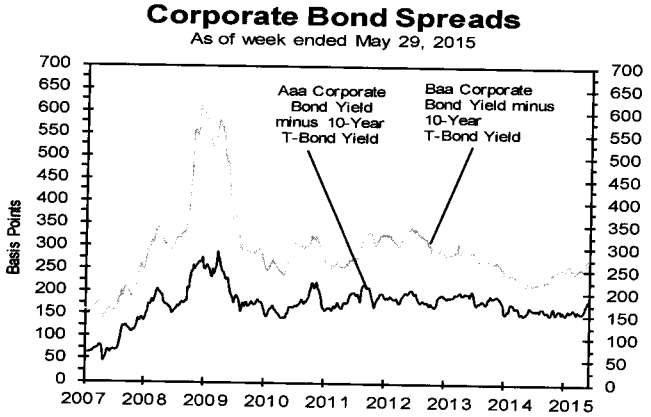
Interest Rates	History: Average For Week Ending May 29	May 22	May 15	May 8	Average For Month Apr.	Mar.	Feb.	Latest Q 1Q 2015	Consensus Forecasts-Quarterly Avg. 2Q 2015	3Q 2015	4Q 2015	1Q 2016	2Q 2016	3Q 2016
Federal Funds Rate	0.12	0.13	0.13	0.12	0.12	0.11	0.11	0.11	0.1	0.3	0.5	0.8	1.1	1.4
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.3	3.3	3.5	3.8	4.1	4.5
LIBOR, 3-mo.	0.29	0.29	0.29	0.29	0.28	0.26	0.26	0.26	0.3	0.4	0.7	1.0	1.4	1.7
Commercial Paper, 1-mo.	0.08	0.08	0.08	0.08	0.07	0.08	0.08	0.08	0.1	0.3	0.5	0.9	1.2	1.5
Treasury bill, 3-mo.	0.02	0.02	0.02	0.01	0.02	0.03	0.02	0.03	0.0	0.2	0.5	0.8	1.1	1.4
Treasury bill, 6-mo.	0.08	0.08	0.09	0.08	0.09	0.11	0.07	0.09	0.1	0.3	0.6	0.9	1.2	1.5
Treasury bill, 1 yr.	0.24	0.23	0.24	0.24	0.23	0.25	0.22	0.22	0.3	0.5	0.8	1.1	1.4	1.7
Treasury note, 2 yr.	0.63	0.61	0.59	0.62	0.54	0.64	0.62	0.60	0.6	0.9	1.2	1.5	1.8	2.1
Treasury note, 5 yr.	1.54	1.54	1.54	1.54	1.35	1.52	1.57	1.49	1.5	1.7	2.0	2.2	2.4	2.7
Treasury note, 10 yr.	2.17	2.23	224	2.19	1.94	2.04	1.98	1.97	2.1	2.3	2.5	2.7	2.9	3.1
Treasury note, 30 yr.	2.94	3.02	3.02	2.91	2.59	2.63	2.57	2.55	2.8	3.0	3.2	3.4	3.6	3.7
Corporate Aaa bond	3.99	4.07	4.02	3.91	3.52	3.64	3.61	3.57	3.8	4.0	4.2	4.4	4.7	4.9
Corporate Baa bond	4.90	4.96	4.94	4.82	4.48	4.54	4.51	4.50	4.7	4.9	5.0	5.2	5.4	5.6
State & Local bonds	3.73	3.81	3.74	3.74	3.51	3.59	3.58	3.52	3.7	3.8	4.0	4.2	4.4	4.6
Home mortgage rate	3.87	3.84	3.85	3.80	3.67	3.77	3.71	3.73	3.8	4.0	4.2	4.5	4.7	4.9

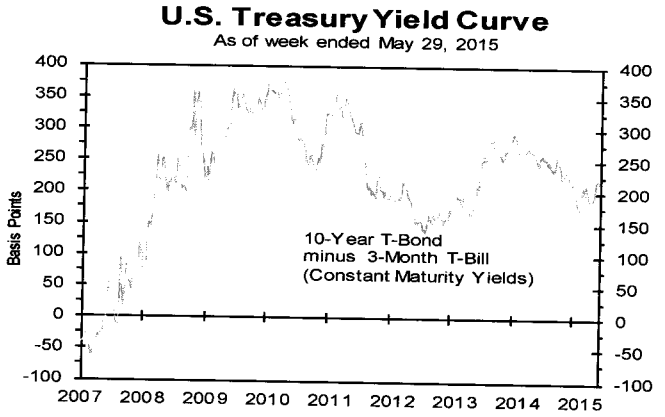
Key Assumptions	History: 2Q 2013	3Q 2013	4Q 2013	1Q 2014	2Q 2014	3Q 2014	4Q 2014	1Q 2015	Consensus Forecasts-Quarterly 2Q 2015	3Q 2015	4Q 2015	1Q 2016	2Q 2016	3Q 2016
Major Currency Index	76.4	76.7	76.0	77.1	76.6	77.8	82.6	89.4	90.4	90.9	91.6	91.7	91.6	91.3
Real GDP	1.8	4.5	3.5	-2.1	4.6	5.0	2.2	-0.7	2.6	3.2	3.0	2.7	2.8	2.8
GDP Price Index	1.2	1.7	1.5	1.3	2.1	1.4	0.1	-0.1	1.7	1.8	1.8	1.9	2.0	2.1
Consumer Price Index	-0.1	2.3	1.4	2.1	2.4	1.2	-0.9	-3.1	2.2	2.2	2.2	2.1	2.3	2.4

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data for interest rates except LIBOR is from Federal Reserve Release (FRSR) H.15. LIBOR quotes available from *The Wall Street Journal*. Interest rate definitions are same as those in FRSR H.15. Treasury yields are reported on a constant maturity basis. Historical data for Fed's Major Currency Index is from FRSR H.10 and G.5. Historical data for Real GDP and GDP Chained Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index (CPI) history is from the Department of Labor's Bureau of Labor Statistics (BLS).









Long-Range Estimates:

The table below contains results of our semi-annual long-range CONSENSUS survey. There are also Top 10 and bottom 10 averages for each variable. Shown are estimates for the years 2017 through 2021 and averages for the five-year periods 2017-2021 and 2022-2026. Apply these projections cautiously. Few economic, demographic and political forces can be evaluated accurately over such long time spans.

		Average For The Year					Five-Year Averages	
Interest Rates		2017	2018	2019	2020	2021	2017-2021	2022-2026
1. Federal Funds Rate	**CONSENSUS**	**2.5**	**3.3**	**3.5**	**3.6**	**3.7**	**3.3**	**3.5**
	Top 10 Average	3.1	4.0	4.2	4.3	4.2	4.0	4.0
	Bottom 10 Average	1.8	2.5	2.7	2.8	3.0	2.6	2.9
2. Prime Rate	**CONSENSUS**	**5.5**	**6.2**	**6.5**	**6.6**	**6.6**	**6.3**	**6.5**
	Top 10 Average	6.1	7.0	7.3	7.3	7.3	7.0	7.0
	Bottom 10 Average	4.7	5.3	5.6	5.8	5.9	5.5	5.8
3. LIBOR, 3-Mo.	**CONSENSUS**	**2.7**	**3.5**	**3.8**	**3.9**	**3.9**	**3.6**	**3.8**
	Top 10 Average	3.4	4.3	4.6	4.6	4.6	4.3	4.4
	Bottom 10 Average	1.9	2.7	2.9	3.1	3.1	2.7	3.0
4. Commercial Paper, 1-Mo.	**CONSENSUS**	**2.6**	**3.4**	**3.7**	**3.8**	**3.8**	**3.5**	**3.7**
	Top 10 Average	3.2	4.0	4.3	4.3	4.3	4.0	4.0
	Bottom 10 Average	2.1	2.8	3.0	3.2	3.2	2.9	3.3
5. Treasury Bill Yield, 3-Mo.	**CONSENSUS**	**2.4**	**3.1**	**3.4**	**3.5**	**3.5**	**3.2**	**3.4**
	Top 10 Average	3.2	3.9	4.2	4.3	4.2	3.9	4.0
	Bottom 10 Average	1.7	2.3	2.6	2.8	2.9	2.4	2.7
6. Treasury Bill Yield, 6-Mo.	**CONSENSUS**	**2.5**	**3.2**	**3.5**	**3.7**	**3.7**	**3.3**	**3.5**
	Top 10 Average	3.4	4.1	4.4	4.5	4.4	4.1	4.2
	Bottom 10 Average	1.8	2.4	2.7	2.9	3.0	2.6	2.8
7. Treasury Bill Yield, 1-Yr.	**CONSENSUS**	**2.8**	**3.5**	**3.7**	**3.8**	**3.8**	**3.5**	**3.7**
	Top 10 Average	3.6	4.3	4.5	4.6	4.5	4.3	4.4
	Bottom 10 Average	1.9	2.6	2.9	3.0	3.0	2.7	2.9
8. Treasury Note Yield, 2-Yr.	**CONSENSUS**	**3.0**	**3.6**	**3.9**	**4.0**	**4.0**	**3.7**	**3.9**
	Top 10 Average	3.9	4.4	4.7	4.8	4.8	4.5	4.6
	Bottom 10 Average	2.1	2.8	3.0	3.1	3.1	2.8	3.0
10. Treasury Note Yield, 5-Yr.	**CONSENSUS**	**3.4**	**3.9**	**4.1**	**4.3**	**4.3**	**4.0**	**4.2**
	Top 10 Average	4.1	4.7	5.1	5.2	5.2	4.8	5.0
	Bottom 10 Average	2.6	3.0	3.1	3.3	3.3	3.1	3.3
11. Treasury Note Yield, 10-Yr.	**CONSENSUS**	**3.7**	**4.2**	**4.4**	**4.6**	**4.6**	**4.3**	**4.5**
	Top 10 Average	4.5	5.1	5.5	5.7	5.8	5.3	5.6
	Bottom 10 Average	3.0	3.2	3.4	3.5	3.6	3.3	3.5
12. Treasury Bond Yield, 30-Yr.	**CONSENSUS**	**4.3**	**4.7**	**4.9**	**5.1**	**5.1**	**4.8**	**5.0**
	Top 10 Average	5.1	5.7	6.0	6.2	6.2	5.8	6.1
	Bottom 10 Average	3.4	3.7	3.8	4.0	4.0	3.8	3.8
13. Corporate Aaa Bond Yield	**CONSENSUS**	**5.4**	**5.8**	**5.9**	**6.1**	**6.1**	**5.9**	**6.1**
	Top 10 Average	6.0	6.5	6.8	7.0	7.1	6.7	6.9
	Bottom 10 Average	4.8	5.0	5.1	5.2	5.2	5.0	5.3
13. Corporate Baa Bond Yield	**CONSENSUS**	**6.1**	**6.6**	**6.8**	**6.9**	**6.9**	**6.7**	**6.9**
	Top 10 Average	6.9	7.4	7.8	8.0	8.0	7.6	8.0
	Bottom 10 Average	5.4	5.7	5.7	5.8	5.8	5.7	5.9
14. State & Local Bonds Yield	**CONSENSUS**	**4.9**	**5.1**	**5.3**	**5.4**	**5.4**	**5.2**	**5.3**
	Top 10 Average	5.6	5.9	6.1	6.2	6.2	6.0	6.1
	Bottom 10 Average	4.2	4.4	4.4	4.5	4.5	4.4	4.6
15. Home Mortgage Rate	**CONSENSUS**	**5.4**	**5.8**	**6.0**	**6.1**	**6.1**	**5.9**	**6.0**
	Top 10 Average	6.0	6.6	7.0	7.1	7.1	6.8	6.9
	Bottom 10 Average	4.7	4.9	5.0	5.2	5.2	5.0	5.0
A. FRB - Major Currency Index	**CONSENSUS**	**90.0**	**89.8**	**89.1**	**88.5**	**88.1**	**89.1**	**87.9**
	Top 10 Average	93.7	93.8	93.4	92.9	92.7	93.3	92.4
	Bottom 10 Average	86.4	85.8	84.7	84.2	83.5	84.9	83.4
		Year-Over-Year, % Change					Five-Year Averages	
		2017	2018	2019	2020	2021	2017-2021	2022-2026
B. Real GDP	**CONSENSUS**	**2.6**	**2.5**	**2.4**	**2.4**	**2.4**	**2.5**	**2.3**
	Top 10 Average	3.0	2.9	2.8	2.8	2.8	2.9	2.7
	Bottom 10 Average	2.2	2.1	2.0	1.9	2.0	2.0	2.0
C. GDP Chained Price Index	**CONSENSUS**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**
	Top 10 Average	2.3	2.5	2.4	2.4	2.4	2.4	2.4
	Bottom 10 Average	1.8	1.8	1.9	1.9	1.8	1.8	1.9
D. Consumer Price Index	**CONSENSUS**	**2.4**	**2.4**	**2.3**	**2.3**	**2.3**	**2.3**	**2.3**
	Top 10 Average	2.7	2.7	2.7	2.6	2.5	2.6	2.5
	Bottom 10 Average	2.1	2.1	2.1	2.0	2.1	2.1	2.0

Arizona Water Company
Derivation of Mean Equity Risk Premium Based on a Study
Using Holding Period Returns of Public Utilities

Line No.		Over A Rated Moody's Public Utility Bonds (1)
1.	Arithmetic Mean Holding Period Returns on the Standard & Poor's Utility Index 1928-2014 (2):	10.69 %
2.	Arithmetic Mean Yield on Moody's A Rated Public Utility Yields 1928-2014	(6.48)
3.	Historical Equity Risk Premium	4.21 %
4.	Forecasted Equity Risk Premium Based on PRPM™ (3)	4.47
5.	Forecased Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (4)	5.62
6.	Average of Historical and PRPM™ Equity Risk Premium	4.77 %

Notes: (1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2014.

(2) Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.

(3) The Predictive Risk Premium Model (PRPM) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A rated public utility bonds from January 1928 - May 2015.

(4) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 10.55% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A rated public utility bond yield of 4.93%, calculated on line 3 of page 3 of this Exhibit results in an equity risk premium of 5.62%. (10.55% - 4.93% = 5.62%)

Arizona Water Company
Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Eight Publicly Traded Water Companies	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
American States Water Co.	0.70	0.83	0.77	7.41 %	3.69 %	9.40 %	9.82 %	
American Water Works Co., Inc.	0.70	0.58	0.64	7.41	3.69	8.43	9.10	
Aqua America, Inc.	0.70	0.79	0.75	7.41	3.69	9.25	9.71	
California Water Service Group	0.75	0.79	0.77	7.41	3.69	9.40	9.82	
Connecticut Water Service, Inc.	0.65	0.75	0.70	7.41	3.69	8.88	9.43	
Middlesex Water Company	0.75	0.79	0.77	7.41	3.69	9.40	9.82	
SJW Corporation	0.80	0.89	0.85	7.41	3.69	9.99	10.27	
York Water Company	0.70	0.93	0.82	7.41	3.69	9.77	10.10	
Average			0.76			9.31 %	9.76 %	9.54 %
Median			0.77			9.40 %	9.82 %	9.61 %
Average of Mean and Median			0.77					9.58 %

Notes:

(1) The market risk premium (MRP) is an average of four different measures. The first measure of the MRP derives the total return on the market by adding the thirteen-week average forecasted 3-5 year capital appreciation to the thirteen-week average expected dividend yield from Value Line Summary and Index. The projected risk-free rate (developed in Note 2) is then subtracted from the total return to arrive at the projected MRP. The second measure of MRP is based on the arithmetic mean of historical monthly return data of large company stocks less the income return on long-term government bonds from 1926-2014 as published by Morningstar, Inc. The third measure applies the PRPM to the Ibbotson historical data to derive a projected MRP. The fourth measure uses data from Bloomberg Professional Services to derive a total projected return on the S&P 500 by using expected dividend yields and long-term growth estimates as a proxy for capital appreciation. The projected risk-free rate is then subtracted from the projected total return to arrive at the projected MRP. The four measures of MRP are illustrated below:

Measure 1: Value Line Projected MRP (Thirteen weeks ending 5/29/15)	
Total projected return on the market 3 -5 years hence:	9.80 %
Projected Risk-Free Rate (described in Note 2):	3.69
MRP based on Value Line Summary & Index:	6.11 %
Measure 2: Ibbotson Arithmetic Mean MRP (1926 - 2014)	
Arithmetic Mean Monthly Returns for Large Stocks 1926 - 2014:	12.07 %
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.23
MRP based on Ibbotson Historical Data:	6.84 %
Measure 3: Application of the PRPM to Ibbotson Historical Data: (January1926 - April 2015)	7.15 %
Measure 4: Bloomberg Projected MRP	
Total return on the Market based on the S&P 500:	13.22 %
Projected Risk-Free Rate (described in Note 2):	3.69
MRP based on Bloomberg data	9.53 %
Average MRP:	7.41 %

(2) For reasons explained in the direct testimony, the appropriate risk-free rate for cost of capital purposes is the average forecast of 30 year Treasury Bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts. (See pages 9 and 10 of Exhibit PMA-7. The projection of the risk-free rate is illustrated below:

Second Quarter 2015	2.80 %
Third Quarter 2015	3.00
Fourth Quarter 2015	3.20
First Quarter 2016	3.40
Second Quarter 2016	3.60
Third Quarter 2016	3.70
2017-2021	4.80
2022-2026	5.00
	3.69 %

(3) Average of Column 6 and Column 7.

Sources of Information: Value Line Summary and Index
Blue Chip Financial Forecasts June 1, 2015
Stocks, Bonds, Bills, and Inflation - Ibbotson® SBBI® 2015 Market Report, Morningstar, Inc., 2015 Chicago, IL.
Bloomberg Professional Services

Arizona Water Company
Standard & Poor's Cash Flow/Leverage Analysis Ratios - Standard Volatility (1)

Financial Risk Profile	FFO / Debt (2) (%)	Debt / EBITDA (3) (x)	FFO / Cash Interest (4) (x)	EBITDA / Cash Interest (5) (x)	CFO / Debt (6) (%)	FOCF / Debt (7) (%)	DCF / Debt (8) (%)
Minimal	60+	1.5	13	>15	>50	40+	25+
Modest	45 - 60	1.5 - 2.0	9 - 13	10 - 15	35 - 50	25 - 40	15 - 25
Intermediate	30 - 45	2.0 - 3.0	6 - 9	6 - 10	25 - 35	15 - 25	10 - 15
Significant	***20 - 30***	***3.0 - 4.0***	4 - 6	***3 - 6***	***15 - 25***	10 - 15	5 - 10
Aggressive	12 - 30	4.0 - 5.0	***2 - 4***	2 - 3	10 - 15	***5 - 10***	***2 - 5***
Highly Leveraged	<12	>5.0	<2	<2	<10	<5	<2
Arizona Water Company	24.36% **(Significant)**	3.13x **(Significant)**	3.89x **(Aggressive)**	5.20x **(Significant)**	23.68% **(Significant)**	8.74% **(Aggressive)**	2.48% **(Aggressive)**

Table 3
Combining the Business and Financial Risk Profiles to Determining the Anchor

	Financial Risk Profile					
Business Risk Profile	**1 (minimal)**	**2 (modest)**	**3 (intermediate)**	**4 (significant)**	**5 (aggressive)**	**6 (highly leveraged)**
1 (excellent)	aaa / aa+	aa	a+ / a	a-	bbb	bbb- / bb+
2 (strong)	aa / aa-	a+ / a	a / bbb+	bbb	bb+	bb
3 (satisfactory)	a/a-	bbb+	bbb / bbb-	bbb- / bb+	bb	b+
4 (fair)	bbb / bbb-	bbb-	bb+	bb	bb-	b
5 (weak)	bb+	bb+	bb	bb-	b+	b / b-
6 (vulnerable)	bb-	bb-	bb- / b+	b+	b	b-

Notes:
(1) From Standard & Pooor's General: Corporate Methodology, November 20, 2013, pp. 5 & 53.
(2) Funds from operations / debt.
(3) Debt / earnings before interest, taxes, depreciation and amortization.
(4) Funds from operations / cash interest.
(5) Earnings before interest, taxes, depreciation and amortization / cash interest.
(6) Cash flows from operations / debt.
(7) Free operating cash flows / debt.
(8) Discretionary cash flows / debt.

Source of Information: http://www.standardandpoors.com/en_AP/web/guest/article/-/view/sourceId/8314109