EPCOR Water Arizona Inc.
Docket No. WS-01303A-20-XXXX
Test Year Ended December 31, 2019

EPCOR Direct Testimony

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Mr. Thomas A. Loquvam

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

ROBERT "BOB" BURNS, Chairman
BOYD DUNN
SANDRA D. KENNEDY
JUSTIN OLSON
LEA MÁRQUEZ PETERSON

IN THE MATTER OF THE APPLICATION OF EPCOR WATER ARIZONA INC. FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND INCREASES/DECREASES IN ITS RATES AND CHARGES BASED THEREON FOR UTILITY SERVICE BY ITS AGUA FRIA, ANTHEM, CHAPARRAL, HAVASU, MOHAVE, NORTH MOHAVE, PARADISE VALLEY, SUN CITY, SUN CITY WEST, TUBAC, AND WILLOW VALLEY WATER DISTRICTS AND FOR CONSIDERATION OF CONSOLIDATION PROPOSALS	DOCKET NO: WS-01303A-20-____

DIRECT TESTIMONY
OF
THOMAS A. LOQUVAM
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

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EXECUTIVE SUMMARY

Thomas A. Loquvam supports and discusses the Company's positions as they relate to including 12 months of Post Test Year Plant additions in the calculation of rate base, performance based compensation as a component of labor expense, and adjustor mechanisms, including the Commission's System Improvement Benefits mechanism and power and water cost adjustors. His testimony also highlights key policy considerations for the Commission as consolidating EWAZ's 11 water districts is once again raised, and supports the Company's recommendation on how to proceed with assessing consolidation generally, as well as the scenarios included in this rate application. Finally, his testimony discusses some of the business risks faced by EWAZ.

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Thomas Arminius Loquvam and my business address is 2355 W. Pinnacle Peak Road, Suite 300, Phoenix, Arizona 85027.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am the Vice President of Corporate Services and General Counsel at EPCOR USA Inc. ("EPCOR USA"), the owner of EPCOR Water Arizona Inc. ("EWAZ" or "Company").

Q. PLEASE DESCRIBE YOUR PRIMARY RESPONSIBILITIES FOR THE COMPANY.

A. My primary responsibilities with EPCOR USA include the management of the Customer Care & Billing, Public & Government Affairs, Legal, Information Technology, and Regulatory & Rates departments.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE AND EDUCATION.

A. I received my Bachelor of Arts in communication and politics with honors from Wake Forest University in 2001. I received my juris doctorate from the University of Arizona James E. Rogers College of Law in 2005. I have been in the utility industry for the past ten years and joined EPCOR in 2019.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes. I testified in the joint application to acquire Brooke Water LLC in January of 2020.

II. PURPOSE OF TESTIMONY

Q. PLEASE DESCRIBE THE PURPOSE OF YOUR TESTIMONY.

A. My testimony provides the Company's positions as they relate to inclusion of Post Test Year Plant additions in the calculation of rate base, performance based compensation as a component of labor expense, and adjustor mechanisms including the Commission's System Improvement Benefits mechanism and power and water cost adjustors. My testimony also highlights key policy considerations for the Commission as consolidating EWAZ's 11 water districts is once again raised, and supports the Company's recommendation on how to proceed with assessing consolidation generally, as well as the scenarios included in this rate application. Finally, my testimony discusses some of the business risks faced by EWAZ, including the current effort by the City of Bullhead City to condemn the Company's Mohave and North Mohave Water Districts and the ongoing coronavirus pandemic.

Q. BEFORE DISCUSSING THE SPECIFICS OF EWAZ'S RATE PROPOSAL, CAN YOU COMMENT ON EWAZ'S FOCUS ON CUSTOMERS?

A. Yes. I am proud to report that in 2019, EWAZ averaged a 94% customer satisfaction score. And in the most recent month—May 2020—the number rose to 96%. These are extraordinarily high numbers for any utility, and demonstrate how hard EWAZ employees work to put customers first, always.

Q. HOW HAS EPCOR ACHIEVED A 94% AVERAGE CUSTOMER SATISFACTION?

A. Customer satisfaction derives from many sources, but over time we have learned that high usage concerns drive a significant amount of customer dissatisfaction. To address this issue, we created a Conservation Specialist Team. This team is

dedicated to helping customers focus on high usage and leak inquiries—two of the most persistent areas of customer concern. The Conversation Specialist Team members receive targeted training so that they are able to quickly and effectively address customer needs. When customers call, team members might spend 20 minutes to an hour or more on the phone reviewing data logs, assisting customers on how to walk their property to inspect for signs of leaks, and troubleshooting how to resolve leaks short of the Company sending a field representative to fix any leak. If the leak can only be fixed by an EWAZ employee, then one will be dispatched. After the cause has been addressed, Conservation Team Members will work with customers on bill payment options and even adjustments as appropriate for bona fide leaks beyond the customers' control.

The Conversation Team is just one example of EWAZ's approach to focusing on customers' needs in a meaningful and persistent way. EWAZ strives at all times to address customer needs quickly and in a way that fully meets its customers' expectations. The 94% customer satisfaction score speaks for itself. EWAZ's customer satisfaction is very high and speaks volumes about the Company's operating philosophy and dedication to customer service.

Q. DO YOU HAVE ANY OTHER COMMENTS ON THE QUALITY OF EPCOR'S OPERATIONS?

A. I do. It is easy to tout oneself as being a top operator and excellent employer, but hard to establish those facts with concrete proof or otherwise objectively measure the quality of a company's operations. Nonetheless, EPCOR has recently been honored with several awards that pierce through simple statistics and tell a deeper story.

First, EPCOR was named one of Phoenix Business Journal's "Best Places to Work" for the second year in a row in 2019. EPCOR placed 14th in the Phoenix-area mid-sized category, an improvement from 18th in 2018. The Phoenix Business Journal's annual award recognizes companies that demonstrate excellence in the areas of employee morale, engagement and retention. Nominated organizations receive a confidential survey that employees fill out voluntarily, and a third-party research firm develops the final list of winners from these results.

In addition, EPCOR was awarded the Healthy Arizona Worksite Program ("HAWP") Award at the Gold Level in May 2019. EPCOR had to complete a comprehensive Centers for Disease Control and Prevention ("CDC") Worksite Health Scorecard and scored 215 out of 294 possible points (the average for other medium-sized employers being 208). EPCOR also met other criteria of having a Worksite Health Improvement Plan in place, attending a four-part HAWP training session, and having a Company-sponsored wellness team. Gold-level recipients have demonstrated institutional support and integrated worksite health programs with business policies and benefits and is the second-highest level that can be awarded (below platinum and above copper and silver). EPCOR was able to achieve gold level in large part because of the wellness offerings that are included with the Company's benefit plans (including the United Health Care "Rally" site, outreach available for employees and family members with chronic medical conditions, employee assistance plan (mental health and substance abuse assistance) as well as additional support for smoking cessation and maternity).

Finally, EWAZ's White Tanks Regional Treatment Facility Expansion and Process Upgrades Project also received the AZ Water Association's Award for best project

of the year in 2020. The Projects of the Year Awards recognize outstanding engineering excellence and achievement for water treatment plants, among others. Projects are assessed based on their originality and innovation, whether they provide social and economic benefits to society, complexity, and whether the project is a cost-effective way to meet the project's objectives.

It can be difficult to accurately gauge how a company is doing. But these awards—spanning the full spectrum from employee engagement to health and safety, technological innovation to operational excellence—reveal that EPCOR continues to improve itself for the benefit of its employees, community, and customers.

III. POST-TEST YEAR PLANT AND BUSINESS RISKS

1. POST-TEST YEAR PLANT

Q. PLEASE DESCRIBE THE COMPANY'S REQUEST FOR POST-TEST YEAR PLANT.

A. The Company is seeking to include approximately $57 million of post-test year plant ("PTYP"), which spans twelve months from the end of the 2019 test year. This PTYP is in service now, or will be in service by the end of 2020, and is needed to continue providing safe and reliable service to those who were customers at the end of 2019.

Q. WHY DOES THE COMPANY BELIEVE THAT INCLUDING 12 MONTHS OF PTYP IS APPROPRIATE?

A. All of the plant the Company proposes to include will be used and useful, for the purpose of serving existing customers, and the cost of the plant is reasonable. Staff and RUCO will have an opportunity to inspect any PTYP put into service well

before the conclusion of this rate case and verify that the plant is in service and used and useful. In addition, including 12 months of PTYP reduces the frequency and magnitude of rate cases by allowing EWAZ an opportunity to plan and implement a stable capital investment program, reduce regulatory lag, and have a reasonable opportunity to earn its authorized rate of return.

Avoiding rate cases eases resource demands on stakeholders, such as Commission Staff and RUCO, and helps customers by reducing the frequency of potential rate increases and moderating possible customer frustration (or even confusion) caused by a perception of constant rate fluctuations.

Q. WERE THE PTYP PROJECTS THAT THE COMPANY SEEKS TO INCLUDE IN RATE BASE IN THIS PROCEEDING APPROVED DURING THE COMPANY'S CAPITAL PLANNING PROCESS?

A. Yes, they were. As part of its overall strategic business plan, the Company prepares a five-year capital investment plan. Each year, the capital investment plan is revisited to identify and prioritize necessary capital improvement projects to ensure safe and reliable water and wastewater utility services, including resolving operational challenges, complying with regulatory requirements, and taking steps to formalize and approve the annual budget. An assessment of capital improvements completed during the prior year is performed, and adjustments, if applicable, are made in accordance with the remaining years of the current five-year investment plan.

Q. PLEASE EXPLAIN THE BASIS OF THE COMPANY'S CAPITAL INVESTMENT PLAN.

A. The Company's capital investment plan is developed from capital improvements identified in Comprehensive Planning Studies ("CPS") conducted on a district-specific basis by EWAZ Engineers. From these studies, capital improvement projects are identified in response to any areas of concern identified in the CPS.

Q. WHAT IS YOUR UNDERSTANDING OF STAFF'S CURRENT POSITION REGARDING POST-TEST YEAR PLANT?

A. My understanding of Staff's position is based on my review of materials Staff filed in Docket No. AU-00000A-19-0080 (the docket to examine PTYP in addition to other rate and regulatory issues). In a presentation Staff submitted on October 16, 2019, Staff listed the criteria for including PTYP as the following:

- Non revenue-producing (for test-year customers);
- Reflects corresponding post-test year retirements;
- Deemed used and useful;
- Not routine such as everyday software or vehicles;
- Significant expenditures;
- When the magnitude of investment relative to the utility's total investment is such that not including the PTYP in the cost of service would jeopardize the utility's financial health; and
- When certain conditions exist, such as (1) the cost of PTYP is substantial and significant; (2) the net impact on revenues and expenses for the post-test year is known and insignificant or is revenue neutral; and (3) the PTYP is prudent and necessary for the provision of services and reflects appropriate, efficient, and timely decision-making.

Staff also made clear that each case will be assessed on a case-by-case basis, and that 12 months of PTYP may be appropriate in the right circumstances.

Q. DOES THE COMPANY BELIEVE ITS REQUEST FOR POST TEST YEAR PLANT MEETS STAFF'S CRITERIA AS SET FORTH IN ITS PRESENTATION SUBMITTED IN DOCKET NO. AU-00000A-19-0080?

A. Yes. The Company's request meets the criteria as explained in this testimony and in the direct testimonies of Mr. Jeffery W. Stuck (EPCOR's Vice President – Arizona Operations) and Mr. Jon P. Boizelle (EPCOR's Rates Manager).

Q. WHY DOES THE COMPANY BELIEVE ITS PROPOSAL TO INCLUDE 12 MONTHS OF PTYP MEETS STAFF'S CRITERIA?

A. First, the PTYP is for test year customers and is revenue neutral. Second, EWAZ's PTYP reflects corresponding retirements appropriately. Third, the PTYP is used and useful, or will be by the end of 2020, and Staff can review and confirm this. Fourth, EWAZ has removed "routine" investments from its PTYP proposal, such as vehicles, everyday software,[1] tools, and engineering studies. Fifth, the aggregate amount of PTYP investment is substantial—totaling approximately $57 million—and excluding it would have a noticeable effect on whether the Company will have a reasonable opportunity to earn the return that the Commission authorizes in this proceeding. Finally, the PTYP is prudent and reflects an appropriate investment and construction schedule.

[1] Note, however, that a limited number of capital projects involving software were classified as construction work in progress for purposes of accounting at the end of 2019, but were in fact in service at that time. The accounting to reclassify the CWIP to Plant in Service for these projects was recorded in 2020 and thus technically are part of PTYP. Nonetheless, the software expenditures occurred during the 2019 Test Year and were in service in 2019.

Q. WHAT IS YOUR UNDERSTANDING OF RUCO'S POSITION ON INCLUDING POST-TEST YEAR PLANT?

A. It appears that RUCO is skeptical of PTYP, and would apparently never support more than six months of PTYP in a litigated case (although RUCO has supported 12 months of PTYP in settled matters). RUCO has asserted its belief that utilities are currently approaching PTYP as an "entitlement" and that PTYP favors the utility to the detriment of its ratepayers.

I appreciate RUCO's perspective, and understand that it is approaching this topic from the context of fulfilling its important statutory duty to represent the interest of residential utility customers. Not all utilities are the same, however, and the circumstances of rate applications can vary greatly. For instance, EWAZ has experienced tremendous growth and has had to replace a great deal of failing and obsolete infrastructure throughout its districts. EWAZ has done so (and continues to do so) while maintaining an average 94% customer satisfaction score. For these reasons and others described in the Company's testimony, I must respectfully disagree with RUCO's one-size fits all approach to PTYP.

Q. DOES THE COMPANY BELIEVE IT IS 'ENTITLED' TO INCLUSION OF POST-TEST YEAR PLANT, OR THAT PTYP UNDULY BENEFITS UTILITIES?

A. No. The Company understands that it must provide evidence demonstrating the reasonableness and propriety of the requested amount of PTYP. The Company's application includes this evidence, and the Company will supplement its filing with additional evidence as it becomes available (including in its rebuttal filing) and as plant is placed into service. This is the same process that numerous utilities have

followed where the Commission has approved 12 months of PTYP, and is the same process used when RUCO has agreed to 12 months of PTYP in settlements.

Moreover, there appears to be a misperception that PTYP necessarily hurts customers. In fact, the opposite is true. In addition to reducing the frequency and magnitude of rate cases, PTYP supports the financial health of utilities by facilitating a reasonable opportunity to earn an authorized return. Utilities need to be healthy so they can appropriately maintain their systems and continue to meet growing demand. There are Arizona utilities with weak financial situations and returns that are currently struggling to fund investments to the detriment of their customers. The inability of one utility in particular to plan for and finance investments has attracted attention from many stakeholders, including RUCO, over the past two years. EWAZ submits that if PTYP is revenue neutral and appropriately verified as used and useful, it can be a tool for utilities to ensure safe and reliable service to customers now and into the future.

Q. WHY DOES THE COMPANY BELIEVE INCLUDING JUST SIX MONTHS OF POST-TEST YEAR PLANT IS INSUFFICIENT?

A. Arbitrarily limiting PTYP to six months is not a realistic cutoff because it undercuts the benefits of PTYP described above and will only result in more rate cases being filed. This is particularly true given the time it takes to process rate case applications. In addition, six months of PTYP simply does not reflect that projects put into service between July and December of 2020 directly benefit the operation of the systems and are necessary to serve existing customers. Indeed, the Company will continue to invest in additional projects to ensure safe and reliable service to existing customers in 2021 (and likely before the conclusion of this case), but EWAZ will

not seek to include those as part of the PTYP request in this case. Mr. Boizelle addresses the accounting and ratemaking aspects of why 12 months of PTYP is appropriate to include in rates in his direct testimony.

Q. DO YOU BELIEVE THAT THE COMPANY'S REQUEST TO INCLUDE 12 MONTHS OF POST-TEST YEAR PLANT IS REASONABLE AND REFLECTS PLANT THAT WILL BE USED AND USEFUL, IN SERVICE TO SERVE EXISTING CUSTOMERS AND AT A REASONABLE COST?

A. Yes I do, for all the reasons I explain in my testimony and those that Mr. Stuck details in his testimony.

2. BUSINESS RISKS

Q. DOES THE AMOUNT OF PTYP THAT THE COMMISSION ALLOWS REPRESENT A BUSINESS RISK TO THE COMPANY?

A. Not directly, but it does generally reflect a category of business risk that EWAZ faces: regulatory uncertainty. The Company understands that the Commission needs the flexibility to address changing needs and circumstances through changes to rules and regulations. The more that those changes are abrupt, however, the more that they increase business uncertainty and can result in tangible risk to EWAZ. Another risk related to the fact that the Company is regulated is the timely recovery of costs.

Q. WHAT OTHER BUSINESS RISKS DOES EWAZ FACE?

A. Water utilities face a myriad of risks that vary with each utility's circumstances. The risks faced by EWAZ include: (i) rate design flaws exacerbated by decreasing customer usage; (ii) lack of economic growth in the Company's service territory; (iii) diversity and density of customer base; (iv) capital intensity; (v) mandatory environmental regulations; (vi) size and EWAZ's ability to weather significant

events that impact sales; (vii) revenue instability; and (viii) changes to laws, such as the 2017 Tax Cuts and Jobs Act ("TCJA"). Finally, EWAZ faces risks related to condemnation.

Q. PLEASE DISCUSS RISKS RELATED TO CONDEMNATION AS WELL AS THE ONGOING CONDEMNATION EFFORT BY THE CITY OF BULLHEAD CITY.

A. The City of Bullhead City is in the process of condemning EWAZ's facilities and operations in the Mohave and North Mohave Water Districts. Currently, BHC and EWAZ are litigating the value of the property to be condemned in Mohave County Superior Court. The timing and ultimate result of this condemnation effort is unknown. Accordingly, EWAZ believes that the only appropriate course from a rate application perspective is to treat the Mohave and North Mohave Water Districts as if the condemnation effort is not occurring. The fact remains, however, that the risk of condemnation always exists for the Company. This risk is part of why the Company strives so hard to keep its costs low and provide the high level of service that results in its high customer satisfaction scores.

Q. PLEASE COMMENT ON HOW EWAZ HAS MANAGED THROUGH THE ONGOING CORONAVIRUS PANDEMIC IN THE CONTEXT OF BUSINESS RISK.

A. The coronavirus swept in with a sudden ferocity that appeared to take most of the country, and even most of the world, by surprise. Although the Company certainly did not predict the coronavirus itself, its long-standing practice of carefully planning for the future and strategically accounting for a myriad of potential risks has enabled EWAZ to manage through this first phase of coronavirus with relative efficiency.

Before the coronavirus prompted the need for a stay at home order in Arizona, EPCOR USA comprehensively reviewed its business continuity plan and prepared for the worst, going so far as to even conduct a dry run work-from-home exercise to expose potential gaps that could be addressed in advance. As the pandemic proceeded, EWAZ implemented rigorous safety procedures, such as using personal protective equipment ("PPE"), social distancing, and the platooning of operations staff, to ensure that no matter what happened with COVID-19, EWAZ's customers would continue to receive safe and reliable service.

Q. PLEASE COMMENT ON HOW EWAZ HAS APPROACHED THE CORONAVIRUS AS IT RELATES TO ITS CUSTOMERS.

A. The Company detailed the customer-facing operational adjustments it made in letters dated March 20 and April 3, 2020 that were filed in the Commission's COVID-19 Preparedness docket (Docket No. AU-00000A-20-0050). I will not repeat all of the details here, but believe that the Company's actions reflected the customer-focused nature of its ethos. For instance, the Company voluntarily suspended disconnection for non-payment *and* reconnected customers who had been disconnected for non-payment to ensure that customers could use the Company's service to stay healthy. In addition, EWAZ took steps for the health of customers by closing its walk-in payment centers to limit a potential source of transmission and instituting safety protocols for personnel-to-public interactions, among others. Finally, EWAZ implemented a bill assistance program focused exclusively on COVID-19-related hardship that it partially funded with shareholder funds.

Q. HOW DOES THE COMPANY VIEW THE NEXT STAGE OF THE CORONAVIRUS AS IT RELATES TO OPERATIONS AND CUSTOMERS?

A. EWAZ is committed to ensuring that all of its customers continue receiving safe and reliable service no matter what happens. The Company's current operational parameters are designed to ensure this quality of service regardless of how the coronavirus might evolve. Similarly, EWAZ has instituted careful work procedures to protect its employees and intends to be conservative as pandemic-related strictures begin to loosen. At this time, EWAZ is not proposing any COVID-19 related deferral. As of May 31, 2020, however, the Company's accounts receivable over 60 days is $622,808 (totaling 2,021 accounts), compared to $146,421 at the end of May 2019 (totaling 308 accounts). We continue to watch this trend. If and when it becomes prudent, the Company will come to the Commission and request appropriate relief.

IV. INCENTIVE COMPENSATION

Q. PLEASE PROVIDE BACKGROUND REGARDING HOW STAKEHOLDERS AND THE COMMISSION HAVE VIEWED THE TREATMENT OF INCENTIVE COMPENSATION IN RATES.

A. With occasional deviations, certain stakeholders and the Commission appear to have generally taken the position that the costs of incentive compensation offered to utility employees should be shared (often 50/50) between shareholders and customers. This position typically focuses on an argument that the financial performance incentivized by this compensation structure benefits shareholders, not customers, and thus shareholders should share in the cost of the incentive compensation. In many cases, however, the discussion does not take into account

the specific differences between the compensation plans offered by each utility, but rather treats all utility incentive compensation plans the same.

Q. PLEASE EXPLAIN THE STRUCTURE OF EWAZ'S INCENTIVE COMPENSATION PLAN.

A. The Company's performance based compensation plan incents employees to: (1) focus on working safely by basing a portion of its plan on requiring achievement of an annual OSHA recordable incident rate (ORIR) or lower; (2) achieve specified operational efficiency measures that include identifying districts with high water loss statistics and setting reduction targets, as well as obtaining targets for completing capital projects on time and at or under budget; and (3) meet and exceed goals for customer satisfaction and timely billing. All of the three components are weighted at 30 percent. Only the final 10 percent is based upon meeting a financial target focused on earning the Company's authorized rate of return. In table format, EWAZ's incentive compensation is structured like this:

Metric	**Percentage of Incentive**
Safety: OSHA Recordable Incident Rate	30%
Operational Efficiency and Water loss	30%
Customer Satisfaction and Timely Billing	30%
Financial Performance	10%

Q. HAS THE COMMISSION RECOGNIZED THE PARTICULAR MAKEUP OF EWAZ'S PERFORMANCE BASED COMPENSATION PLAN IN PREVIOUS CASES?

A. Yes. The Commission disallowed ten percent of the Company's plan in previous cases, including the Company's last wastewater rate case (Decision No. 76162 (June 28, 2017)). The Company's performance-based compensation plan was also approved as requested in Decision No. 75268 (September 8, 2015). The Commission stated in Decision No. 75268 that it believed "the Company's compensation request is reasonable with the removal of the 10% of pay tied to the Company's financial performance."

Q. WHAT IS THE PURPOSE OF EWAZ'S INCENTIVE PROGRAM?

A. EWAZ's financial incentive program enables the Company to attract and retain the highly qualified personnel needed to operate a top-caliber utility.

Q. IS THE TOTAL COMPENSATION THE COMPANY PROVIDES TO EMPLOYEES (BASE PLUS INCENTIVE) AT A REASONABLE LEVEL?

A. Yes, and it is appropriate for the Commission to evaluate whether the level of performance-based compensation is reasonable by examining the total compensation awarded to employees. EWAZ strives to keep total compensation for employees at the median of what other utilities provide. The Company believes the Commission correctly analyzed the Company's performance-based compensation when the Commission evaluated total compensation in the Company's 2014 rate case (Decision No. 75268). Although the Commission disallowed the 10% tied to meeting financial targets, the Commission nonetheless determined that the Company's total overall compensation is reasonable and approved including the rest of EWAZ's incentive compensation plan in rates:

> The real issue in evaluating incentive compensation is whether total compensation, including incentive pay, is reasonable. If overall compensation for employees is reasonable, it should be allowed assuming the allocation

methods are reasonable. Corporate labor costs are also appropriate as long as the benefits (*e.g.,* competence and access to capital) of corporate management are present. The evidence in the record does not indicate that the overall compensation requested by EPCOR is excessive or unreasonable.

The Company's total compensation structure, including its incentive compensation plan that is dependent on meeting safety targets, customer service metrics, operational goals, and financial targets has not changed since 2014.

Q. IS IT FAIR TO SAY, MR. LOQUVAM, THAT STRUCTURING THE COMPANY'S TOTAL COMPENSATION SO THAT A PORTION IS INCENTIVE-BASED ENCOURAGES EFFICIENCY AND PRODUCTIVITY TO CUSTOMERS' BENEFIT?

A. Yes. Incentive compensation is a key component of the Company's calculation of salary and wages and this amount of total compensation is included in the Company's analysis when it assesses whether the Company is paying its employees appropriately at market rates. In the same way that the Company incents its employees through salary and wages, this compensation incents employees to work safely, efficiently, and effectively while providing customers with desired levels of customer service. As I indicated earlier in my testimony, the Commission has historically authorized the Company to recover all incentive compensation not tied to financial performance because the total compensation awarded is reasonable. The Company's plan motivates employees toward achieving the Company's goals of insuring a safe work environment while providing quality customer service to our customers and operating efficiently and effectively by controlling costs to achieve financial goals. The Company's compensation plan is competitive enough to attract and retain quality employees, which is vital for the continued safe and reliable operations of its water systems across its current 11 districts.

Q. SHOULD ANY OF EWAZ'S INCENTIVE PROGRAM BE DISALLOWED?

A. No. Each of the metrics described above reflect an appropriate objective for utility employees to pursue from both the utility's and the customers' perspective. It is self-evident that 90% of the Company's incentive program metrics—encompassing safety, operational efficiency, and customer satisfaction—are well within the bounds of appropriate and desirable motivations for utility employees. In fact, even the remaining 10% pertaining to financial performance ultimately helps customers by supporting the Company's financial health. When utilities are financially healthy, they are better able to obtain less expensive capital, which translates into lower rates for customers. In addition, financial health permits EWAZ to plan for future customer needs and cost-effectively re-invest in the business to meet those needs.

Although the Commission has disallowed incentives tied to financial performance, EWAZ still maintains that it is appropriate to weight 10% of employees' incentive based on financial performance and include in rates all of the compensation paid to attract and retain qualified employees.

Q. HOW DOES EWAZ'S INCENTIVE COMPENSATION PLAN COMPARE TO OTHER UTILITIES?

A. EWAZ's compensation program is different in several significant ways from those of Southwest Gas Corporation ("SWG") and Tucson Electric Power ("TEP"), two entities with pending rate cases. For instance, SWG has a separate Management Incentive Program and Supplemental Executive Retirement Plan ("SERP"). These are programs offered only to certain management or executive employees. SWG's management incentive program lists net income as 40 percent of the target

weighting. TEP's incentive compensation includes a Short Term Incentive plan, a Long Term Incentive plan, and a SERP. As with the SWG's Management Incentive Program, TEP's short-term incentive plan includes a net income component that is 40% of the overall incentive. In addition, TEP's long-term incentive plan and SERP apply to a limited subset of TEP employees.

By contrast, EWAZ's incentive program is offered to every employee and is a part of every employee's total compensation. The financial component of EWAZ's plan is 10%, as opposed to financial targets that account for 40% of SWG's management incentive plan and 40% of TEP's short-term incentive plan.

There is nothing inherently wrong with these programs. Nevertheless, they are incentive programs that have a significantly different weighting of the financial component, and the overall programs apply only to a fraction of the total employees of these utilities. In addition, these programs differ from EWAZ's in that the financial components are significantly larger (closer to 50 percent). Thus, any finding regarding what percentage should be borne by shareholders for those companies is not comparable to the percentage that should be borne by EWAZ's shareholder.

Q. IF INCENTIVE COMPENSATION TIED TO FINANCIAL PERFORMANCE IS APPLIED TO EWAZ, HOW MUCH OF THE COMPANY'S COMPENSATION SHOULD BE DISALLOWED?

A. Ten percent. To disallow more of the Company's incentive program would be discriminatory and fail to take into account the specific components of the Company's incentive program.

V. SYSTEM IMPROVEMENT BENEFITS MECHANISM AND ADJUSTOR MECHANISMS

Q. IS THE COMPANY SEEKING APPROVAL OF A SYSTEM IMPROVEMENT BENEFITS MECHANISM ("SIB") FOR ANY OF ITS WATER DISTRICTS?

A. No. After careful evaluation of the needs for all of the Company's water systems, the arguments and positions of parties in the 2017 rate case, and the efficacy of the SIB mechanism, the Company has determined to not seek a SIB for any of its water districts, regardless of whether the Commission consolidates any of EWAZ's water districts. The Company, however, may seek to establish a SIB for any or all of its water districts in future rate cases and reserves its right to do so.

Q. WHAT ABOUT THE SIB THAT IS CURRENTLY IN EFFECT FOR THE CHAPARRAL WATER DISTRICT?

A. Consistent with my answer to the previous question, the Company is not seeking to continue the SIB for the Chaparral water district. The Company's position is that, barring any opposition, the current SIB for Chaparral will be eliminated at the conclusion of this case.

Q. IS EWAZ STILL PROPOSING TO MAINTAIN OR ADD CERTAIN ADJUSTOR MECHANISMS IN THIS CASE?

A. Yes. Many of these adjustor mechanism proposals recover expenses that are largely out of the Company's control (such as the costs for purchased water and power). The current adjustors are narrowly-tailored to recover specific costs and are symmetrical – meaning that customers benefit if the relevant costs incurred by the Company decline. Mr. Boizelle details the need and structure of these adjustors in

his direct testimony, including EWAZ's proposal to modify the Power Cost Adjustor Mechanism ("PCAM") and Purchased Water Adjustor Mechanism ("PWAM"). Notably, the Company is not seeking approval of a Property Tax Adjustor Mechanism ("PTAM") that it sought approval for in 2017.

Q. WHAT IS THE PURPOSE OF THE COMPANY'S PROPOSAL FOR AN ADJUSTOR TO ADDRESS TAXABILITY OF CONTRIBUTIONS IN AID OF CONSTRUCTION?

A. This is another proposal stemming from the TCJA. Unfortunately, the TCJA made contributions (and advances) in aid of construction ("CIAC" and "AIAC", respectively) taxable and thus increased costs to customers. In accordance with Commission policy in Decision No. 76974 (November 27, 2018), the Company has continued to elect to self-pay those gross-up taxes and recover them annually through a surcharge on customers' bills. There is a possibility that the TCJA will be amended to eliminate the taxability of CIAC and AIAC. Until then, however, the Company must continue to pay those taxes. In an effort to track those tax expenses separately, and given that the taxes are a pass-through caused by the TCJA, the Company proposes a separate adjustor to collect those expenses. Should the TCJA be amended to repeal the taxability of CIAC and AIAC, it will be much simpler to zero-out a separate adjustor and halt the collection of tax expenses for CIAC and AIAC, not to mention pass the savings back to customers in a more expedited fashion. Ms. Hubbard provides further details on the Company's proposal in her direct testimony.

VI. CONSOLIDATION AND THE TIMING OF THE RATE APPLICATION

1. A BRIEF HISTORY OF THE COMPANY'S RATE CONSOLIDATION

Q. WHEN DID FULL RATE CONSOLIDATION FIRST BECOME AN ISSUE IN EWAZ'S RATE CASES?

A. The Commission has been considering whether and how to consolidate EWAZ's water districts for over 10 years, but no decisions have been made. The Commission first examined full rate consolidation in Docket No. W-01303A-08-0227 *et al.* for EWAZ's predecessor, Arizona American Water. The Commission had requested parties to provide analyses and testimony addressing partial and full consolidation, including costs and benefits pertaining to rates and operations, among other issues. In Decision No. 71410 (December 8, 2009), the Commission stated that the issue of rate consolidation was "of critical importance," that the Company should commence a dialogue with customers, and kept the docket open in order to further discuss the issue of consolidation.[2]

Q. DID CONSOLIDATION CONTINUE TO BE AN ISSUE IN SUBSEQUENT RATE CASES?

A. Yes, it did. The Company's 2008 rate case and the associated decision (Decision No. 71410) only addressed a subset of the Company's water and wastewater districts (Agua Fria, Havasu, Mohave, Paradise Valley, Sun City West, and Tubac Water Districts and the Mohave Wastewater District). On July 2, 2009, the Company filed a rate application for its Anthem and Sun City Water Districts – as well as for its Anthem/Agua Fria, Sun City, and Sun City West Wastewater Districts (Docket No.

[2] Decision No. 71410 at 51.

W-01303A-09-0343 *et al.*). This rate case was eventually bifurcated to allow for Commission consideration of rate consolidation issues in a second phase. In that second phase, the Company proposed its preferred consolidation scenario for all of its water districts and for all of its wastewater districts – proposing to implement consolidation through five revenue-neutral steps.

Q. WHAT WAS THE ULTIMATE OUTCOME REGARDING RATE CONSOLIDATION IN THAT DOCKET?

A. The Commission declined to order consolidation in Decision No. 72047. Rather, the Commission found that the topic of rate consolidation should be considered in a future case with all of the Company's districts and ordered the Company to develop multiple consolidation proposals in a future application.[3]

Q. HAD RATE CONSOLIDATION BEEN ORDERED FOR ANY OF THE COMPANY'S DISTRICTS BEFORE 2017?

A. No. In fact, in Decision No. 73227 (June 5, 2012), the Commission deconsolidated the Anthem/Agua Fria Wastewater District. Following Decision No. 73227, however, the Commission received a significant number of customer complaints from Agua Fria customers regarding deconsolidation. As a result, the Commission initiated a proceeding to address the customer complaints. In that complaint proceeding, the parties reached a settlement, which the Commission approved in Decision No. 74881 (December 23, 2014). In approving the parties' settlement, the Commission ordered the Company to file a wastewater rate case with consolidation,

[3] *Id.* at 84-85.

deconsolidation and stand-alone proposals. As required, the Company made that filing in April 2016, in Docket No. WS-01303A-16-0145.

Q. AS A RESULT OF THAT 2016 WASTEWATER RATE APPLICATION, WHAT DID THE COMMISSION DECIDE REGARDING WASTEWATER CONSOLIDATION?

A. In Decision No. 76162 (June 28, 2017) (the Company's most recent wastewater rate case), the Commission approved full consolidation with consolidated rates being phased in over five years. The Commission's detailed analysis found full consolidation to be just and reasonable and in the public interest. Specifically, the Commission found in Decision No. 76162 that: (i) consolidating geographically distant districts did not violate cost causation principles (p. 202); (ii) consolidation lessens the burden of projected capital expenditures (p. 202); (iii) consolidation addresses rate disparities between districts that are otherwise receiving the same service from the same company (pp. 204-05); (iv) physical interconnection is not necessary for consolidation (p. 205); and (v) based on the record, consolidation would result in cost savings to customers (p. 205-06).

The last step of the five-year phase-in will begin in July 2021.

Q. TURNING TO WATER CONSOLIDATION, PLEASE DESCRIBE THE BACKGROUND PRECEDING THIS FILING.

A. In March 2014, EWAZ filed a rate application for its Mohave, Paradise Valley, Sun City and Tubac Water Districts and its Mohave Wastewater District. This application resulted in the Commission issuing Decision No. 75268 (September 8, 2015). In Decision No. 75268, the Commission directed EWAZ to file a rate case

for all of its water systems that included rate consolidation options as an alternative to treating all of the systems as independent.[4] Specifically the Commission stated:

> The issue of rate consolidation is not before us in this proceeding and we do not believe it would be appropriate to address consolidation in this case. However, we will direct EPCOR to file a rate case for all of its systems by no later than July 1, 2018**,** using a 2017 test year, and include in the application rate consolidation options as an alternative to treating all of the systems as independent. A similar directive is currently in place for all of EPCOR's wastewater districts.

In response to the Commission's order, the Company filed a rate case for its 11 water districts in August 2017 (the "2017 case") based on a 2016 test year. In that application, EWAZ proposed and recommended full consolidation of its 11 water districts.

Q. WHAT OCCURRED IN EPCOR'S 2017 WATER RATE CASE?

A. The Recommended Opinion and Order ("ROO") in the 2017 case proposed that the Commission not find consolidation to be in the public interest. The Commission, however, was unable to reach an agreement on the ROO. As no final decision was reached, the issue of consolidation was not addressed in a final order.

Q. WHAT HAPPENED AFTER THE COMMISSION FUNCTIONALLY REJECTED THE ROO IN THE 2017 CASE?

A. Instead of adopting the ROO, the Commission approved interim rates for EWAZ's 11 water districts in Docket No. WS-01303A-19-0011, Decision No. 74177 (April 16, 2019). In this interim-rate decision, the Commission ordered EWAZ to file another rate application and include, in this filing, geographically adjacent or regional-basis rate consolidation options, including cost of service studies for each

[4] See Decision No. 75268 at 50.

geographically adjacent or regional district. The Commission also ordered EWAZ to file this case by May 1, 2020 using a 2019 test year.[5]

2. THE PROBLEMS INHERENT WITH DECONSOLIDATION

Q. PLEASE DESCRIBE HOW CONTINUED DECONSOLIDATION POSES CHALLENGES FOR AND OTHERWISE HARMS CUSTOMERS.

A. The structure of this rate application itself is a good place to start. Although legally one rate case application,[6] the application essentially contains 11 distinct rate applications reflecting the 11 distinct water districts, six of which would be considered Class A utilities if they were standalone water companies. The resource burden on Staff, the Commission, RUCO, and stakeholders for a filing like this is significant. This consequence is separate from the elevated level of complexity resulting from an 11-in-1 rate case that customers will encounter if and when they seek to meaningfully participate in EWAZ rate proceedings.

Aside from regulatory burden and complexity, deconsolidated districts also result in customers paying different rates for the same service from the same company. In Decision No. 76162, the Commission recognized that rate disparity between districts receiving the same service from the same company can be inequitable and a reason to consolidate in certain circumstances.[7]

[5] This deadline was subsequently extended until June 15, 2020. Decision 77607 (April 22, 2020).
[6] Decision No. 77147 at 15.
[7] Decision No. 76162 at 204-05.

In addition, deconsolidation puts smaller systems at risk for rate shock. Should smaller water systems need significant capital to ensure the continued provision of safe and reliable service, the entirety of those costs will be spread over a smaller number of customers. Consolidation would address this risk by spreading the cost of necessary investments over a greater number of billing determinants.

Although this is not a complete list, regulatory burden and cost, discrimination, and rate shock represent the more persistent and widely-discussed problems associated with deconsolidation.

3. THE BASIS FOR HISTORICAL OPPOSITION TO CONSOLIDATION

Q. DESPITE THESE PERSISTENT PROBLEMS WITH DECONSOLIDATION, HAVE STAKEHOLDERS OPPOSED CONSOLIDATION IN THE PAST?

A. Yes, certain customer groups have consistently opposed consolidation. For every group of customers that oppose consolidation, however, there appears to be another group that endorses consolidation. The issue of whether customers support or oppose consolidation is mixed. Although the impact of consolidation on customers is situation specific and varies over time, the concerns of customers must be understood and ultimately addressed.

Q. FOR THOSE WHO HAVE OPPOSED CONSOLIDATION, WHAT HAVE BEEN THE BASES FOR THAT OPPOSITION?

A. Opponents of consolidation have primarily focused on the rate design principle that cost causers should pay for their own costs. This cost causation argument has included multiple facets, the two most prominent ones being that (i) deviating from cost causation results in subsidies; and (ii) geographically distinct communities, or

communities that are not interconnected, should not be consolidated because they do not share common facilities.

Q. DO YOU AGREE THAT ADHERENCE TO COST CAUSATION PRECLUDES CONSOLIDATION?

A. I do not. In fact, the Commission has approved cost-of-service rates for fully consolidated, yet geographically dispersed utilities, including Arizona Public Service Company ("APS") and SWG. This is, at least in part, because a cost of service study can ensure that costs are fairly allocated in a manner that ensures cost causers pay their fair share of costs. Indeed, this is what happened with Arizona Water Company when the Commission adopted the utility's proposal for partial consolidation. The Commission did so, even though the proposal would result in rate differentials, because the resulting rates would nonetheless still be based on the cost to serve and no customer would pay less than the cost of service.[8]

Q. IN OTHER WORDS, HAS THE COMMISSION RECOGNIZED THAT CONSOLIDATION CAN OCCUR IN A MANNER THAT IS CONSISTENT WITH COST CAUSATION?

A. Yes, and this addresses the concern about subsidization. The reality is that all utility rates deviate from a strict cost of service in some way and inevitably result in some degree of subsidization. For instance, it is simply more expensive to serve rural customers than it is to serve urban customers. Nonetheless, the Commission has universally approved rates that charge rural and urban customers the same rate. The fact is that subsidization occurs all around us. The only question raised by

[8] Decision No. 71845 at 50.

consolidation is whether and how otherwise modest subsidization can be in the public interest.

Q. IF CONSOLIDATION CAUSES SOME DEGREE OF SUBSIDIZATION, CAN CONSOLIDATION NONETHELESS BE IN THE PUBLIC INTEREST?

A. Yes. Consolidation might very well result in some subsidization, particularly when smaller districts are merged with larger districts. But this circumstance can still be in the public interest. As discussed below, smaller systems are more at risk for rate shock caused by considerable required investment that must then be spread over a smaller group of customers. Larger systems, on the other hand, are less likely to experience significant rate changes as a result of being consolidated with smaller systems.

Note that I use the phrase "significant rate changes" knowing that customers can view what constitutes significant differently. From a statewide perspective in the context of discussing what might be in the public interest, I am focusing on the overall dollar amount of a change. When assessing increases as a function of percentages, the result can be misleading when the initial bill is lower. For instance, a $5 increase on an average bill of $20 is a 25% increase. This increase can be characterized as considerable when viewed as a percentage, but might be perceived as less considerable when viewed as an overall dollar amount.

Ultimately, the amount of an increase (and associated subsidies, if any) that customers in a larger district might pay as a result of consolidation is only part of the equation. Other parts of the equation include whether the increase is in the overall public interest in light of the beneficial effect on the smaller system(s) being

consolidated and whether the impact of the increase in question can be blunted through a phase-in or some other mechanism.

Q. IF COST CAUSATION DOES NOT REQUIRE DECONSOLIDATION, WHAT IS THE BASIS FOR STAKEHOLDERS RELYING ON COST CAUSATION IN THE FIRST PLACE?

A. If pressed on the source of the cost causation principle, advocates will inevitably cite James C. Bonbright and his principles of rate design.[9] The problem, however, is that cost causation is but one of 10 listed principles:

Revenue- related Attributes:

1. Effectiveness in yielding total revenue requirements under the fair-return standard without any socially undesirable expansion of the rate base or socially undesirable level of product quality and safety.
2. Revenue stability and predictability, with a minimum of unexpected changes seriously adverse to utility companies.
3. Stability and predictability of the rates themselves, with a minimum of unaccepted changes seriously adverse to ratepayers and with a sense of historical continuity. (Compare "The best tax is an old tax.")

Cost- Related Attributes:

4. Static efficiency of the rate classes and rate blocks in discouraging wasteful use of service while promoting all justified types and amounts of use:
   a. In the control of the total amounts of service supplied by the company;
   b. In the control of the relative uses of alternative types of service by ratepayers (on-peak verses off-peak service or higher quality verses lower quality service).
5. Reflection of all of the present and future private and social costs and benefits occasioned by a service's provision (i.e, all internalities and externalities).
6. Fairness of the specific rates in the apportionment of total costs of service among the different ratepayers so as to avoid arbitrariness and capriciousness and to attain equity in three dimensions: (1) *horizontal (*i.e. equals treated equally); (2) *vertical* (i.e., unequals treated unequally); and (3) *anonymous* (i.e., no

[9] James C. Bonbright, et. al., *Principles of Public Utility Rates* (New York: Columbia University Press, 1961).

ratepayer's demands can be diverted away uneconomically from an incumbent by a potential entrant).

7. Avoidance of undue discrimination in rate relationships so as to be, if possible, compensatory (i.e., subsidy free with no intercustomer burdens).
8. Dynamic efficiency in promoting innovation and responding economically to changing demand and supply patterns.

Practical- related Attributes:

9. The related, practical attributes of simplicity, certainty, convenience of payment, economy in collection, understandability, public acceptability, and feasibility of application.
10. Freedom from controversies as to proper interpretation.[10]

Bonbright readily acknowledged that his principles were subjective and ambiguous, and a cursory review of the foregoing principles reveals why. What is "fairness" or "undue discrimination"? The principles can also require reconciliation. For instance, what kind of rate design will have "a minimum of unexpected changes seriously adverse to utility companies," and "a minimum of unaccepted changes seriously adverse to ratepayers and with a sense of historical continuity"? The fact is that Bonbright never held his rate design principles out as mandatory or rigid, but instead compiled this list of principles simply because it was:

> useful in reminding the ratemaker of considerations that might otherwise be neglected, and also useful in suggesting important reasons why problems of practical rate design do not yield readily to scientific principles of optimum pricing.[11]

Advocates that exclusively focus on cost causation take Bonbright's conclusions severely out of context and, in fact, are presenting an argument that is inconsistent with Bonbright's *Principles of Public Utility Rates*. Cost causation is simply not the end-of-discussion rate design principle that some stakeholders treat it as.

[10] Bonbright, *Principles of Public Utility Rates* at 383-4.
[11] *Id.* at 384.

Q. IF COST CAUSATION IS ONLY ONE OF MANY COMPETING AND CONFLICTING RATE DESIGN PRINCIPLES, HOW SHOULD COST CAUSATION BE ASSESSED?

A. Just as Bonbright highlighted fair cost allocation (which does not even directly translate into cost causation), he also highlighted avoiding undue discrimination, fairness, and efficiency. In the context of consolidation, these principles conflict. Different rates for the same service by the same company could be considered undue discrimination. And consolidating smaller systems with larger systems would result in rates that are reasonably seen as fair by the customers in smaller systems. Despite relying on Bonbright, those who cite cost causation to oppose consolidation almost never acknowledge, let alone address, the complexities and contradictions in Bonbright's principles.

My point, however, is not that the opponents of consolidation are wrong in ignoring these contradictions; I do not attempt to reconcile Bonbright's conflicting principles either. Instead, my point is that citing to cost causation as a reason to avoid consolidation cannot be the end of the discussion. Cost causation as a rate design principle is one of many complex, subjective rate design principles. Indeed, if cost causation was the only rate design principle and rigorously adhered to, many changes would result, including that (i) up to 90% of EWAZ's revenue requirement would be collected in its basic service charge to reflect the fixed nature of EWAZ's cost structure; and (ii) EWAZ's tiered commodity charges would become declining to reflect the reduced cost per unit as customers use more. Yet those who cite to cost causation to oppose consolidation do not endorse these rate design outcomes. This

inconsistency is an implicit recognition that cost causation is only part of the conversation.

Q. MUST DISTRICTS BE GEOGRAPHICALLY NEARBY OR INTERCONNECTED BEFORE THEY CAN BE CONSOLIDATED?

A. No, and insisting on proximity or interconnection before consolidation is actually inconsistent with both historical and recent Commission decisions. Historically, the Commission has authorized the full consolidation of utilities like APS and SWG, despite geographic dispersion that is about as significant as it can be in Arizona. Consolidation opponents have nonetheless argued that these statewide utilities are interconnected. But this isn't true for SWG, which is a local gas distribution company that operates non-interconnected systems that are only indirectly networked through large gas transmission lines owned and operated by third-party gas shippers. And recently, the Commission rejected this interconnection argument using the circumstances of APS's service territory and cost to serve, finding that electric customers are only loosely interconnected and the cost to serve them varies widely:

> [a]lthough electric transmission lines may loosely connect customers throughout the state, it is not accurate to believe that all of those customers are served by the same plant, as there are also electric substations spread throughout the state to serve specific areas. In fact, the cost to serve electric customers within a common class can vary greatly depending on factors such as location and population density. Yet residential customers pay the same rate for electric service whether they reside in an apartment in a densely populated city or in a house in a rural area because the residential customer class is unified throughout the state.[12]

[12] Decision No. 76162 at 205.

Accordingly, the Commission found that it was in the public interest to fully consolidate EWAZ's geographically dispersed, non-interconnected wastewater districts, noting that:

> The Commission has long recognized that there is a benefit to spreading the costs of electric service over a larger number of customers, and we believe that the same kinds of benefits can be attained by spreading costs of service over a larger number of wastewater customers receiving like services from a common provider.[13]

Q. **ARE ALL OF EWAZ'S CURRENT ELEVEN WATER DISTRICTS COMPRISED OF GEOGRAPHICALLY CLOSE OR INTERCONNECTED COMMUNITIES?**

A. No. EWAZ's Mohave District contains six distinct, non-interconnected water systems,[14] and Agua Fria, Sun City, and Willow Valley each contain two distinct, non-interconnected systems. Nonetheless, these physically separated water systems have been fully consolidated to form the Mohave, Agua Fria, Sun City, and Willow Valley Districts, respectively. Moreover, one could argue that Agua Fria, spread out over 83 square miles, is not comprised of geographically adjacent communities.

Q. DOES EWAZ HAVE WATER DISTRICTS THAT ARE INTERCONNECTED, BUT REMAIN UNCONSOLIDATED?

A. Yes. Agua Fria is interconnected at two points with Sun City West; Sun City West is interconnected to Sun City; and the Mohave and North Mohave Districts are interconnected. Nonetheless, stakeholders have opposed consolidating Agua Fria with Sun City, Sun City with Sun City West, and Mohave with North Mohave.

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[13] *Id*. at 205.
[14] These are Mohave, Camp Mohave, Lake Mohave Highlands, Desert Foothills, Rio Vista Ranches, and Gateway.

Q. FOR PURPOSES OF WHETHER THE COMMISSION SHOULD ORDER CONSOLIDATION OF EWAZ'S WATER DISTRICTS, WHAT DOES IT MEAN THAT SOME OF THE COMPANY'S CURRENT WATER DISTRICTS ARE COMPRISED OF SMALLER NON-INTERCONNECTED WATER SYSTEMS?

A. Practically, there is little to directly conclude. But it does reveal that non-interconnected water systems can be consolidated in a way that meets cost of service principles and is accepted by customers. It also demonstrates that the Commission does not treat interconnection as a prerequisite to consolidation.

Q. DOES THE COMMISSION TREAT GEOGRAPHIC PROXIMITY AS A PREREQUISITE TO CONSOLIDATION?

A. No, and the Commission has explicitly rejected viewing cost causation so narrowly as to require geographic proximity before consolidation, finding that "cost-causation does not need to be viewed in such a narrow manner based on geography but can instead be considered for customer classes that span across all geographic areas" of a utility's service territory.[15] In other words, cost causation principles can be satisfied if rates are based on defined customer classes, even if the customers in those classes are not "constrained by geography."[16] For EWAZ's water districts, this means that establishing rates based on objective customer service characteristics, such as the meter sizes through which customers take service, would be consistent with cost causation, even if the customers in that class are in geographically distant areas of the state. This is exactly how rates for geographically

[15] *Id*. at 202.
[16] *Id*.

dispersed utilities such as APS and SWG can nonetheless offer statewide rates that are based on the cost to serve their customers.

Q. WHAT ABOUT RATE SHOCK CAUSED BY CONSOLIDATION?

A. Whether consolidation causes rate shock is not a criticism of consolidation, but instead a criticism of how consolidation is implemented. Consolidation can be accomplished in a manner consistent with gradualism through the use of phase-ins, low income assistance, and other rate mechanisms.

But another question must be asked: rate shock for whom? The premise of consolidation is that inevitably, smaller water systems will experience rate shock resulting from their small customer base paying for necessary investments.[17] One need only look at the recent experience of Ajo Improvement Company discussed in Decision No. 77287 (July 2019) to see the principle. There, the Commission had no choice but to order a 289% rate increase on a small group of customers because a significant amount of necessary investment had been made over a long period of time.[18]

Although an extreme example, the question remains: is it more fair to let smaller systems be at risk for outsized rate increases, or implement a consolidation phase-in that is slow enough to ensure several steps of modest rate increases over time for the larger system(s)?

[17] This could occur over time as a result of accumulated investment or all at once if, for instance, a critical and expensive piece of infrastructure experienced a catastrophic failure.
[18] The Commission also ordered that this rate increase be phased in over 10 years, demonstrating that how rate changes are implemented can at least partially address customer opposition.

4. THE COMPANY'S PERSPECTIVE ON CONSOLIDATION

Q. WHAT IS THE COMPANY'S OVERALL POSITION ON CONSOLIDATION?

A. EPCOR believes that over the long-term, full consolidation is the most appropriate and fair outcome for all customers, and that the Commission should (i) formally recognize that fact; and (ii) order that full rate consolidation be achieved over a timeframe and implementation structure that addresses customer needs and that the Commission deems appropriate and reasonable.[19] A critical fact in this discussion is that immediate full consolidation is likely too much for certain customers groups to accept, at least at this time. Instead proposing an immediate and full consolidation, EWAZ is using this rate application to present several consolidation scenarios to highlight what could happen under each. The Company seeks to facilitate an in depth conversation amongst stakeholders regarding (i) how consolidation might be appropriate; and (ii) whether any degree of consolidation can be implemented in a way that mitigates or even fully addresses some or all customer objections to consolidation. EWAZ understands that some stakeholders may refuse to participate in this conversation out of principle, and will categorically reject consolidation under all situations and regardless of any potential mitigating measures. Although such a position is regrettable, the Company will nonetheless endeavor to find common ground with those stakeholders who are willing to keep

[19] Note, however, that due to prior customer commitments, the Company affirmatively opposes consolidating the Mohave and North Mohave districts with any other districts but themselves. Although I use the term "full consolidation," I define this term as excluding Mohave and North Mohave because of the Company's commitments. The full consolidation scenario included in this filing does include Mohave and North Mohave, but does so to facilitate the policy discussion regarding consolidation only.

an open mind for purposes of the discussion. The ultimate objective is to provide the Commission with consolidation options for consideration.

Q. IS THE COMPANY FORMALLY PROPOSING FULL CONSOLIDATION?

A. No. EWAZ urges the Commission to make as much progress on consolidation as it deems to be in the public interest, but is not formally proposing full consolidation at this time. Consistent with Decision No. 77147, EWAZ has submitted regional, cost-of-service-study-based consolidation scenarios for the Commission's consideration.[20] The testimony of Company witness Mr. Bickey Rimal discusses the rate impacts involved with these scenarios and includes the related cost of service studies.

In an effort to continually make progress on the possibility of future consolidation, EWAZ is also proposing certain cost and rate-related adjustments designed to slowly bring together the rates charged in the Company's eleven water districts. These adjustments include making uniform across all districts EWAZ's: (i) depreciation rates; (ii) service charges; and (iii) service line and meter installation fees. They also improve the similarity of certain rate design elements (such as the basic service charge and commodity tiers) between the districts. None of these adjustments involve actually consolidating any of the Company's districts. But over time, they will modestly reduce rate differentials between EWAZ's districts and can facilitate the consideration of consolidation in the future.

[20] As described in the testimonies of Ms. Sheryl Hubbard, Mr. Jon Boizelle, Ms. Sandy Skoubis, and Mr. Bickey Rimal, the Company has submitted rate schedules reflecting a stand-alone proposal. The Company has also submitted the bill impacts of full consolidation for comparison purposes as discussed by Mr. Rimal.

Q. WHAT IS THE COMPANY'S PROPOSAL REGARDING CONSOLIDATION?

A. EWAZ proposes that, using information gleaned from the scenarios included in this rate application and the parties' consideration of those scenarios, the Commission determine the best way to make as much progress on consolidation as possible for the benefit of all customers. EWAZ also proposes that in assessing the best course forward, the Commission take into account: (i) the broader public interest; (ii) the relative risk and harm experienced by the Company's customers in the various water districts resulting from consolidation and deconsolidation, respectively; and (iii) how the implementation of consolidation might be able to address concerns that parties might raise. Ultimately, because of the historical controversy regarding consolidation, EWAZ's proposal focuses more on creating a sound process to ensure that the Commission has the opportunity to assess the manner and means of consolidation with useful and consistent standards.

Q. MR. LOQUVAM, PLEASE SUMMARIZE THE RATE CONSOLIDATION SCENARIOS THE COMPANY HAS INCLUDED IN THIS CASE.

A. The Company has put forth several scenarios for the Commission and stakeholders to compare:

1) A Stand-Alone Scenario, which involves each of the current 11 districts continuing to stay separate; and
2) Four Consolidation Scenarios, which will be referred to as Consolidation Scenarios 1, 2, 3, and Full Consolidation.

Within these Scenarios, the Company has clustered different districts together using different groupings as follows:

- Group A: Agua Fria, Anthem, Chaparral, Havasu, Tubac, and Willow Valley;
- Group B: Mohave and North Mohave;
- Group C: Agua Fria, Anthem, Chaparral, and Tubac;
- Group D: Sun City and Sun City West;
- Group E: Havasu and Willow Valley;
- Group F: Agua Fria, Anthem, and Tubac; and
- Group G: All eleven districts into a single district.

From these four Consolidation Scenarios, the Company evaluated combined the following district groups:

1) Scenario 1, which involves the following Groups (A, B, stand-alones):

a. Group A: Agua Fria, Anthem, Chaparral, Havasu, Tubac, and Willow Valley

b. Group B: Mohave and North Mohave

c. The remaining districts on a stand-alone basis.

2) Scenario 2, which involves the following Groups (C, B, D, E, stand-alone):

a. Group C: Agua Fria, Anthem, Chaparral, Tubac

b. Group B: Mohave and North Mohave

c. Group D: Sun City and Sun City West

d. Group E: Havasu and Willow Valley

e. Stand-alone: Paradise Valley

3) Scenario 3, which involves the following rate groups (F, B, stand-alones):

a. Group F: Agua Fria, Anthem, and Tubac

b. Group B: Mohave and North Mohave

c. The remaining districts on a stand-alone basis

4) Full Consolidation Scenario, which involves Group G only.

Q. DO THESE SCENARIOS COMPLY WITH THE COMMISSION'S DIRECTIVE IN DECISION NO. 77147 TO PRESENT GEOGRAPHICALLY ADJACENT OR REGIONAL BASIS RATE CONSOLIDATION OPTIONS?

A. Yes. In developing these scenarios, EWAZ pursued the objective of grouping districts by region. Given the nature of EWAZ's districts, however, it is clear that one district—Tubac—does not have another water district nearby or in anything like a readily discernable region. At the same time, Tubac is EWAZ's smallest district with less than 1,000 connections. Given this size and that it would otherwise be impossible to include Tubac in a "region," the Company decided that it was pragmatic to include Tubac in the larger regional grouping in Maricopa County. Similarly, Willow Valley and Havasu are relatively smaller districts and potentially exposed to outsized rate spikes. To facilitate a discussion regarding the benefits of consolidating smaller systems with larger systems, EWAZ also included scenarios in which Willow Valley and Havasu were included in the Maricopa County district grouping. Although the benefits to the smaller districts are substantial, the impacts to the customers in the larger districts are less noticeable.

Q. DO EACH OF THE CONSOLIDATION PROPOSALS ADHERE TO COST OF SERVICE PRINCIPLES?

A. Yes. Generally, cost causation is the determination of what it costs for a utility to serve its customers and creates a fair way to allocate those costs amongst the utility's customers. We perform a cost of service study in a rate case to ascertain what it costs to serve different customer classes (*e.g.*, residential, commercial, etc.) using one or more methodologies, such as the Commodity Demand method that we used in this case. Although it is typical for a cost of service study to be conducted by customer class across a utility's entire service territory, we have conducted separate cost of service studies here to support each proposal (*i.e.*, a separate cost of service study for each of the options we are submitting in this application). For each of

those studies, cost items for providing water service were allocated to several cost functions, with those cost functions allocated among customer classes, for each of the proposed districts within an option. By using this long and widely-accepted process, the Company could determine cost causation by customer class for each of the proposed districts within each option.

5. CONSIDERATIONS ARISING FROM THE FILED CONSOLIDATION SCENARIOS

Q. HOW SHOULD THE COMMISSION AND STAKEHOLDERS ASSESS THE CONSOLIDATION SCENARIOS INCLUDED WITH THE COMPANY'S FILING?

A. The relative policy advantages and disadvantages of the stand-alone and full consolidation options are discussed in detail above. Below, I provide some additional observations arising out of the remaining three scenarios that Mr. Rimal calculated. It is important to note, however, that proposed revenue requirement adjustments can thwart any attempt to effectively assess consolidation. This is because it can be difficult to determine which rate impacts are caused by the revenue requirement proposal and which are caused by the consolidation proposal. Because our consolidation proposals seek to facilitate a robust conversation regarding the costs and benefits of consolidation alone, my discussion below removes the revenue requirement from the picture by focusing only on bill impacts that are incremental to the revenue requirement adjustment assumed in the stand-alone scenario.

In addition, for purposes of facilitating an efficient discussion, I focus on bill impacts for residential customers with 5/8" meters[21] who use 7,000 gallons per month.

Further, my discussion below focuses on dollar impacts, not percentages. As noted above, percentages can distort the magnitude of changes, particularly when the initial number against which the percentage is applied is smaller. Importantly, however, I can only speak of average rate impacts assuming a common level of usage. Individual customers will see different impacts depending on how much water they use.

Finally, I do not consider different means of implementing these scenarios, such as phasing the scenarios in over time. My goal is to identify the final bill impact to the affected customers at the end of consolidation. If that impact is an incremental increase of $6 per month, for instance, the Commission could then order consolidation phased in over 3 years so that the customers would only pay an additional $2 per month each year until they reached the full $6 per month.

Q. HOW DOES THE CONSOLIDATION SCENARIO 1 CAPTURE THE BENEFITS OF CONSOLIDATION?

A. Short of full consolidation, Scenario 1 best demonstrates how small districts can be effectively merged with larger districts in a way that provides significant benefits to the smaller districts and avoids outsized impacts to larger districts. Specifically, this scenario would reduce rates from the stand-alone for all of the smaller utilities in Group A as shown:

[21] For Anthem and Chaparral, however, I use 3/4" meters because when the systems were constructed, 3/4" meters were installed where 5/8" meters would have otherwise been installed.

- Anthem ($31.05)/month
- Tubac ($17.70)/month
- Willow Valley ($71.36)/month
- Chaparral ($3.01)/month
- Havasu ($15.22)/month

This scenario, however, would also increase customer bills in Agua Fria, EWAZ's largest district, by approximately $6.05/month. It should nonetheless be noted that this increase could be mitigated through implementation. In addition, consolidating Agua Fria with Anthem, Tubac, Willow Valley, and Chaparral would add approximately 27,029 customers[22] to Agua Fria's 2019 year-end customer count of approximately 49,000 customers, facilitating future rate stability and making rate spikes less likely.

The districts in Group B under this scenario—Mohave and North Mohave—are interconnected and would have relatively narrow rate impacts if they were combined. Mohave's rate differential would be $0.30/month higher and North Mohave's rate would decrease by ($2.88) per month. These rate impacts illustrate a how a smaller system (North Mohave) can benefit with nominal impacts to the larger district (Mohave).

This scenario keeps the remaining districts as stand-alone.

Q. HOW DOES SCENARIO 2 CAPTURE THE BENEFITS OF CONSOLIDATION?

[22] At the end of the 2019 Test Year, customer counts for these districts were as follows: Anthem 9,014; Chaparral 13,945, Havasu 1,896, Tubac 625, Willow Valley 1,549.

A. This scenario has more of a regional focus, separating Havasu and Willow Valley into their own district and consolidating Sun City and Sun City West. Group C under this scenario continues to provide rate reductions to the smaller districts as follows:

- Anthem ($31.74)/month
- Chaparral ($3.70)/month
- Tubac ($18.39)/month

Similar to the prior scenario, these rate decreases come with a rate increase to the larger district, Agua Fria, in the amount of $5.36. These numbers reflect similar benefits as Scenario 1, but only less so. The numbers are slightly different, but not significantly so. Moreover, the resulting district would see incrementally fewer customers integrated, lessening the benefit to Agua Fria of having more customers in the same district.

In addition, this scenario fails to capture the full benefit of protecting smaller districts from price spikes because it leaves Havasu and Willow Valley—districts with 1,896 and 1,594 customers, respectively—with each other. Unifying Havasu and Willow Valley does result in reduced rates from the stand-alone scenario for 5/8" residential customers in both districts: Havasu with a ($3.40)/month reduction and Willow Valley with a ($59.54)/month reduction. This outcome reflects that for these districts only, the legacy rate design for customers with other meter sizes plays an important role in consolidation. Despite this dual reduction for this specific meter size, grouping these two small districts still exposes both districts to the long-term risk of the rate shock that can occur when a small group of customers must pay for required investments.

In addition, although Scenario 2 can be characterized as a "regional" scenario, the comparison with Scenario 1 is worth noting. Under Scenario 1, Havasu and Willow Valley see a more significant rate reduction (($11.82)/month for both) and mitigate the risk of future rate spikes. Scenario 2 does not involve those benefits. And its only counterbalancing benefit over Scenario 1 is a slightly moderation to Agua Fria's rates. Under Scenario 1, Agua Fria's rates would increase by $6.05/month, but under Scenario 2, Agua Fria's rates increase $5.36/month—a difference of $0.69. It is not clear that the consequence to Havasu and Willow Valley resulting from Scenario 2 instead of Scenario 1 in exchange for avoiding a $0.69/month increase on Agua Fria customers would be in the overall public interest.

The last notable difference from the prior scenario is that Scenario 2 combines Sun City and Sun City West. Compared to the standalone scenario, integrating these two districts results in an incremental increase of $4.48/month for Sun City's 25,018 customers and an incremental decrease of ($4.69)/month for Sun City West's 15,383 customers.[23] There is no clear way to weigh these relative rate impacts in the context of the overall public interest. It should be noted, however, that combining these two districts would create a district of over 40,000 customers. Over the long term, this larger group of customers would facilitate rate stability and predictability.

Q. HOW DOES THE SCENARIO 3 CAPTURE THE BENEFITS OF CONSOLIDATION?

A. This final scenario is meant to show another iteration of regional consolidation by combining Anthem and Agua Fria, while also folding in Tubac as the smallest district. The incremental rate impacts to the smaller districts are:

[23] Both of these customer counts are from year-end 2019.

- Anthem ($30.62/month)
- Tubac ($17.27/month)

At the same time, this scenario would increase Agua Fria's rates by $6.48 per month over the stand-alone rates. These rate impacts are relatively similar to prior scenarios that merge Agua Fria with the smaller districts, but do not capture nearly the benefits. Not only does Scenario 3 leave all other smaller districts at risk for price spikes, but it also deprives Agua Fria of the larger customer base that will help mitigate its own future rate instability.

Other than unifying Mohave and North Mohave, this scenario keeps all other districts as standalone. It provides these districts with no other incremental advantages and imposes on them all of the disadvantages of being deconsolidated.

Q. PLEASE DISCUSS THE FULL CONSOLIDATION SCENARIO INCLUDED IN THE APPLICATION.

A. Full consolidation is appropriately viewed as a policy outcome designed to achieve long-term goals—rate stability and gradualism, the end of rate discrimination, and eliminating rate spikes for small communities, among others. If the Commission were to adopt the Full Consolidation Scenario, the rate differentials from the stand-alone outcome are as follows:

- Agua Fria ($3.30)/month
- Anthem ($40.40)/month
- Chaparral ($12.36)/month
- Havasu ($24.57)/month
- Mohave $2.78/month
- North Mohave $0.40/month

- Paradise Valley $3.47/month
- Sun City $17.47/month
- Sun City West $7.55/month
- Tubac ($27.05)/month
- Willow Valley ($80.71)/month

This Scenario contains disparate rate impacts, ranging from significant increases to significant decreases. What this range of impact reveals is that certain districts have different characteristics that must be addressed for a rate design to be successful. For instance, as Company witness Mr. Jeffrey Stuck describes, significant portions of Sun City's system were built in the 1950s and 60s with substantial CIAC. This means that the district's rates are lower because the infrastructure is fully depreciated, which translates into a more noticeable impact resulting from full consolidation. But the system age also means that substantial investment is needed to ensure the continued provision of safe and reliable service. Full Consolidation would moderate the impact of this future rate increase by enfolding Sun City in a broader customer base. It can be difficult to recognize this future benefit in the face of immediate bill impacts, but a gradual implementation of consolidation may help. Perhaps more than any of the other Scenarios included in this application, Full Consolidation forces a discussion on how to achieve the public interest through balances and tradeoffs, and whether tools exist to implement consolidation in a way that is best for all EWAZ customers over the long-term.

Q. DO YOU BELIEVE THAT THE CONSOLIDATION PROPOSALS AND CORRESPONDING RATE DESIGNS PROPERLY BALANCE THE COST

OF SERVICE WHILE JUDICIOUSLY INCORPORATING CONFLICTING OPERATIONAL AND SOCIAL OBJECTIVES?

A. The Scenarios and corresponding rate designs included with this rate application have been created using a well-settled cost of service study methodology, which has resulted in cost-based rates. In addition, the consolidation Scenarios themselves highlight and reflect the benefits of consolidation to varying degrees, particularly when viewed in relation to one another. By presenting these Scenarios, the Company hopes to open up a broader dialogue with the Commission, Staff, RUCO, and other stakeholders on how "conflicting operational and social objectives" can be balanced and reconciled.

It is undeniably true, however, that some customers will always oppose consolidation under any circumstance. Driven by a myriad of reasons, many valid and almost all emotional, these customers will never accept that consolidation in any form, degree, or manner of implementation will address their objections. The Company believes it is imperative to fully understand the valid concerns expressed by these customers and attempt in reasonable ways to resolve them. The hope is that through this application and the proceeding that follows, all sides are able to see how consolidation can be achieved, slowly or quickly, in a manner that is in the long-term public interest.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

EPCOR Water Arizona Inc.
Docket No. WS-01303A-20-XXXX
Test Year Ended December 31, 2019

EPCOR Direct Testimony

Ms. Sheryl L. Hubbard

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

ROBERT "BOB" BURNS, Chairman
BOYD DUNN
SANDRA D. KENNEDY
JUSTIN OLSON
LEA MÁRQUEZ PETERSON

IN THE MATTER OF THE APPLICATION OF EPCOR WATER ARIZONA INC. FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND INCREASES/DECREASES IN ITS RATES AND CHARGES BASED THEREON FOR UTILITY SERVICE BY ITS AGUA FRIA, ANTHEM, CHAPARRAL, HAVASU, MOHAVE, NORTH MOHAVE, PARADISE VALLEY, SUN CITY, SUN CITY WEST, TUBAC, AND WILLOW VALLEY WATER DISTRICTS AND FOR CONSIDERATION OF CONSOLIDATION PROPOSALS	DOCKET NO: WS-01303A-20-____

DIRECT TESTIMONY
OF
SHERYL L. HUBBARD
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

DIRECT TESTIMONY
OF
SHERYL L. HUBBARD
ON BEHALF OF
EPCOR WATER ARIZONA, INC.
JUNE 15, 2020

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EXECUTIVE SUMMARY

Sheryl L. Hubbard provides a summary of the Company's requested relief as well as a brief summary of the rate case filing, which includes: 1) stand-alone results for each district; and 2) consolidation scenarios for alternative combinations of the Company's eleven water districts. Ms. Hubbard is sponsoring the following schedules in the Company's standard filing requirements:

- Schedule A-1 – Computation of Increase In Gross Revenue Requirements
- Schedule A-2 – Summary of Operations
- Schedule A-3 – Summary of Capital Structure
- Schedule A-4 – Construction Expenditures and Gross Utility Plant in Service
- Schedule A-5 – Summary of Cash Flows
- Schedule D-1 – Summary of Cost of Capital
- Schedule D-2 – Cost of Long-Term Debt
- Schedule D-3 – Cost of Preferred Stock
- Schedule D-4 – Cost of Common Equity
- Schedule E-4 – Statement of Changes in Stockholder's Equity

Ms. Hubbard also provides an overview and support for certain key requests by the Company, including the following:

1) Approval of requested revenue increase including a determination of its proposed fair value rate base based on it RCND study, fair value rate of return and its adjusted operating income;
2) Inclusion of revenue-neutral post-test year plant additions through December 31, 2020 that will provide service to test year customers;
3) Approval of proposed depreciation rates;
4) Approval to institute a purchased water adjustor mechanism for the Agua Fria Water District that does not yet have this pass-through adjustor;
5) Approval of a modified power cost adjustor mechanism for those districts that currently have power cost adjustors and approval of power cost adjustor

mechanisms for those districts that do not yet have these pass-through adjustors;

6) Approval of continued deferral of costs associated with the Deployed Service Member Credit Program and the Disabled Military Veteran Credit Program;

7) Approval of recovery of deferred tank maintenance expenditures in Anthem and request for deferral of future tank maintenance expenditures for Willow Valley and Brooke Water;

8) Approval of three requests for deferral accounting for continued deferral of costs associated with (i) the DSMC program; (ii) the DMVC program; and (iii) Anthem's tank maintenance program, as well as new requests to defer tank maintenance costs for Willow Valley;

9) Approval of proposed rate design including several modifications to the Company's general service tariffs for Agua Fria (eliminate non-firm treatment services and the hook-up fee (Part B)), miscellaneous service charges, service line and meter installation fees, and modifications to hook up fee tariffs;

10) Facilitation of an in-depth discussion amongst stakeholders regarding (i) how consolidation might be appropriate; and (ii) whether any degree of consolidation can be implemented in a way that mitigates or even fully addresses some or all of the objections to consolidation of certain customers, while maintaining the support of consolidation expressed by other customers. If, based on that stakeholder input, the Commission determines it is in the public interest to do so, the Company would support (i) some consolidation now to the extent consistent with the public interest and (ii) guidance as to how full consolidation can be designed and implemented over the long-term;

11) Approval of the request to recover rate case expenses through a surcharge;

12) Approval to recover the new taxes on AIAC and CIAC through an adjustor mechanism;

13) Approval to recover acquisition premiums for the purchases of the assets of North Mohave Valley Corporation and the Willow Valley Water Company; and

14) Approval to eliminate compliance requirements from previous Commission decisions that are now obsolete.

Finally, Ms. Hubbard summarizes the testimony provided by other Company witnesses in this proceeding.

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND TELEPHONE NUMBER.

A. My name is Sheryl L. Hubbard. My business address is 2355 West Pinnacle Peak Road, Suite 300, Phoenix, Arizona 85027, and my business phone is 623-445-2419.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by EPCOR USA Inc. ("EUSA") as Director, Rates.

Q. PLEASE DESCRIBE YOUR RESPONSIBILITIES WITH EUSA.

A. My primary responsibilities with EUSA are to direct the preparation of rate applications and other regulatory filings consistent with the applicable regulatory agency's filing requirements in Arizona, New Mexico and Texas. I am also a regulatory liaison between EUSA and the regulators of EPCOR Water Arizona Inc. ("EWAZ" or "Company"), EPCOR Water New Mexico Inc. ("EWNM"), EPCOR Gas Texas Inc. and any public outreach.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE AND EDUCATION.

A. I have been employed by EUSA since February 1, 2012. Prior to EUSA's acquisition of the American Water operations in Arizona and New Mexico, I was employed by Arizona-American Water ("AZAM") since March 2007.

I have more than 35 years of experience in public utility accounting and regulation – including 20 years of service employed by utility regulatory agencies in Michigan and Arizona, and over 15 years with water, wastewater and gas utilities

with service territories in Arizona, New Mexico, Colorado, and Texas. During my employment with the regulatory agencies in Michigan and Arizona, my responsibilities included managing and preparing revenue requirement calculations for electric, water and steam utilities. Public utilities by which I have been employed include Citizens Communications Company, Arizona Water Company, AZAM, and now EUSA.

My responsibilities have primarily been in the rates and regulatory areas of all of the aforementioned public utilities, but I also managed the financial planning and analysis function and financial reporting side of the business. I have a Master of Business Administration from the University of Phoenix and a Bachelor of Arts degree with a major in Accounting from Michigan State University. I am a licensed, certified public accountant in Arizona. I am a member of the Arizona Society of Certified Public Accountants.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes, I have. I have also testified before other regulatory commissions in various jurisdictions.

II. PURPOSE OF TESTIMONY

Q. PLEASE DESCRIBE THE PURPOSE OF YOUR TESTIMONY.

A. My testimony provides a brief discussion of the history leading up to this rate case application and provides an overview of the Company's requested relief. In addition, my testimony identifies other Company witnesses in this case and the subject matter discussed in their respective direct testimony. Certain specific requests in the Company's Application are also discussed in further detail in my testimony.

Q. ARE YOU SPONSORING ANY SCHEDULES REQUIRED BY THE COMMISSION'S STANDARD FILING REQUIREMENTS IN THIS PROCEEDING?

A. Yes, I am sponsoring the Company's summary information and the cost of capital information required by the Commission's standard filing requirements for the "A" Schedules and "D" Schedules, respectively. I am also sponsoring Schedule E-4, Statement of Changes in Stockholder's Equity.

Q. ARE YOU SPONSORING ANY EXHIBITS?

A. Yes. I am sponsoring the following exhibits:

- Exhibit SLH-1 Rate Case Expense by District
- Exhibit SLH-2 Taxes on Advances in Aid of Construction ("AIAC") and Contributions in Aid of Construction ("CIAC")
- Exhibit SLH-3 Plan of Administration ("POA") - Adjustor for Taxes on AIAC and CIAC.

III. ORGANIZATION OF TESTIMONY

Q. PLEASE EXPLAIN HOW YOUR TESTIMONY IS ORGANIZED.

A. Sections I through III are self-explanatory.

Section IV provides a summary of the Company's rate case application.

Section V of my testimony lists the Company's witnesses and summarizes the subject matter that each witness will address in their respective direct testimony.

Section VI identifies the schedules required by the Commission's standard filing requirement (A.A.C. R14-2-103) that I am sponsoring in this proceeding and a discussion of each of those schedules.

Section VII highlights some of the major revenue-requirement-related requests for which the Company is seeking approval in this Application.

Section VIII discusses rates and tariffs and highlights some of the modifications that the Company is proposing in this Application.

Section IX highlights key issues in the Company's Application and summarizes the additional requests for which EWAZ is seeking specific approval from the Commission. In particular, my testimony discusses the Company's proposed recovery of rate case expenses and taxes on AIAC and CIAC are discussed. The rationale and justification for the Company's proposals on these key issues are set forth in this section.

IV. SUMMARY OF RATE APPLICATION (ALL WATER DISTRICTS)

Q. PLEASE PROVIDE A SUMMARY OF THE DISTRICTS AND THE TEST YEAR THAT IS USED IN THE DETERMINATION OF THE REQUESTED REVENUE INCREASE IN THIS CASE.

A. The Application in this case includes the Agua Fria, Anthem, Chaparral, Havasu, Mohave, North Mohave, Paradise Valley, Sun City, Sun City West, Tubac, and Willow Valley Water Districts. Please note that the Company has a pending application to acquire the Brooke Water System and merge it with its Havasu Water District. The Commission, however, has not had the opportunity to issue a decision on the Company's joint application by the time EWAZ is required to file

this Application. If the Commission approves the Company's application while this proceeding is pending, the Company will propose a manner in which to account for this new development as is appropriate. The test year is the twelve months ended December 31, 2019.

Q. PLEASE PROVIDE A BRIEF HISTORY OF COMMISSION ACTIONS LEADING UP TO THE FILING OF THIS RATE CASE APPLICATION.

A. In Decision No. 77147 (April 16, 2019), the Commission ordered EWAZ to file a permanent rate application by May 1, 2020[1] using a December 31, 2019 test year. The Company was also ordered to include geographically adjacent or regional basis rate consolidation options with corresponding cost of service studies for each option.

Q. IN DECISION NO. 77147, DID THE COMMISSION ALSO AUTHORIZE AN INTERIM RATE INCREASE FOR EWAZ?

A. Yes. The Commission approved interim rates and charges designed to collect incremental revenue in the amount of $8,662,680 via commodity surcharges for each of its 11 water districts beginning with service on or after April 1, 2019.

Q. WERE THE INTERIM RATES SUBJECT TO ANY COMMISSION-IMPOSED CONDITIONS?

A. Yes, the Commission adopted the Staff's recommendation that in the event of an over-collection of the authorized revenues, the over-collection should be subject to refund and include interest at a rate of 10 percent. In addition, the Commission

[1] This date was subsequently extended to June 15, 2020 by Decision No. 77607 (April 22, 2020).

ordered the Company to post a letter of credit in the amount of $8,794,293 to which the Company complied on April 30, 2019.

Q. HAS THE COMPANY OVER-COLLECTED THE INCREMENTAL REVENUE AUTHORIZED BY DECISION NO. 77147?

A. No. The Company has prepared a rate case application using a test year ending December 31, 2019, as directed by the Commission in Decision No. 77147. Based on the fair value rate base and results of operations, which include the authorized interim surcharge revenues, the Company's schedules show an additional revenue deficiency totaling $12,535,406 over and above the $8,662,680 authorized by Decision No. 77147 as discussed in further detail in this testimony.

Q. PLEASE SUMMARIZE THE REQUESTED INCREASE BY DISTRICT IN THIS APPLICATION.

A. EWAZ's proposed fair value rate base, test year operating income, and base-rate revenue increase, for each of the eleven water districts is summarized in Table 1 below.

Table 1. Rate Base, Operating Income by District, Base-Rate Revenue Increase

Water District	Fair Value Rate Base	Test Year Operating Income	Revenue Increase	% Increase	Bill Impact Residential 5/8-inch with usage of 7,000 Gallons
Agua Fria Water	$ 158,459,990	$ 6,504,696	$ 5,047,375	12.40%	$ 7.38
Anthem Water	$ 71,703,632	$ 3,283,896	$ 1,281,945	10.08%	$ 19.28
Chaparral Water	$ 52,717,997	$ 2,728,739	$ 470,294	3.72%	$ 5.65
Havasu Water	$ 10,596,957	$ 502,336	$ 159,150	5.10%	$ 16.18
Mohave Water	$ 43,326,567	$ 1,537,526	$ 1,539,130	15.86%	$ 8.08
North Mohave Water	$ 5,474,690	$ 92,343	$ 392,750	27.38%	$ 14.91
Paradise Valley Water	$ 63,877,326	$ 2,703,413	$ 1,623,100	15.27%	$ 11.15
Sun City Water	$ 69,642,832	$ 3,524,016	$ 1,299,356	8.21%	$ 1.63

Water District	Fair Value Rate Base	Test Year Operating Income	Revenue Increase	% Increase	Bill Impact Residential 5/8-inch with usage of 7,000 Gallons
Sun City West Water	$ 46,220,605	$ 2,474,160	$ 303,660	3.24%	$ 0.49
Tubac Water	$ 1,432,566	$ (24,217)	$ 134,276	22.61%	$ 28.06
Willow Valley Water	$ 4,627,516	$ 85,810	$ 284,370	26.69%	$ 43.74
Total Company	$ 528,080,678	$ 23,412,718	$ 12,535,406	10.64%	

The total annual, base-rate revenue increase requested in this Application for the eleven water districts is $12,535,406, which represents a total increase for the 11 districts of approximately 10.64% over present revenues of $117,815,826. As noted, the present revenues include the revenue collected through the interim surcharges in the amount of $8,662,680 as authorized by the Commission in Decision No. 77147. The proposed base rate increases by district are summarized in Table 2 below.

Table 2. Summary of Base-Rate Revenue Increase

District	Revenue Increase
Agua Fria Water	$ 5,047,375
Anthem Water	1,281,945
Chaparral Water	470,294
Havasu Water	159,150
Mohave Water	1,539,130
North Mohave Water	392,750
Paradise Valley Water	1,623,100
Sun City Water	1,299,356
Sun City West Water	303,660
Tubac Water	134,276
Willow Valley Water	284,370
Total Company	$ 12,535,406

The base-rate revenue increases in Table 2 do not include the increases associated with the Company's request to recover two categories of pass-through expenses: (i) rate case expenses; and (ii) taxes on AIAC and CIAC. The Company is

requesting permission to recover these items through separate surcharges that I discuss below.

The proposed base-rate revenue increases, rate case expense surcharge and the taxes on AIAC/CIAC surcharge are summarized in Table 3 below.

Table 3 – Proposed Revenue Increase by District

Water District	Revenue Increase	Base Rate % Increase	Rate Case Expense (5 Years)	Taxes on CIAC (1 Year w/Adjustor)	Total Surcharges	Surcharge % Increase	Total Increase Including Surcharges	Total % Increase	Bill Impact Residential 5/8-inch with usage of 7,000 Gallons
Agua Fria Water	$ 5,047,375	12.40%	$113,768	$ 3,538,089	$ 3,651,857	8.97%	$ 8,699,232	21.37%	$ 10.93
Anthem Water	$ 1,281,945	10.08%	$ 27,308	$ (285)	$ 27,023	0.21%	$ 1,308,968	10.30%	$ 19.47
Chaparral Water	$ 470,294	3.72%	$ 29,346	$ 12,958	$ 42,305	0.33%	$ 512,599	4.06%	$ 5.83
Havasu Water	$ 159,150	5.10%	$ 5,824	$ 9,122	$ 14,946	0.48%	$ 174,096	5.58%	$ 16.55
Mohave Water	$ 1,539,130	15.86%	$ 30,770	$ 36,801	$ 67,571	0.70%	$ 1,606,701	16.56%	$ 8.37
North Mohave Water	$ 392,750	27.38%	$ 3,938	$ -	$ 3,938	0.27%	$ 396,688	27.66%	$ 15.00
Paradise Valley Water	$ 1,623,100	15.27%	$ 18,924	$ 4,918	$ 23,842	0.22%	$ 1,646,942	15.49%	$ 7.62
Sun City Water	$ 1,299,356	8.21%	$ 41,864	$ (9,116)	$ 32,748	0.21%	$ 1,332,104	8.42%	$ 1.69
Sun City West Water	$ 303,660	3.24%	$ 21,587	$ (524)	$ 21,063	0.22%	$ 324,723	3.46%	$ 0.58
Tubac Water	$ 134,276	22.61%	$ 2,265	$ -	$ 2,265	0.38%	$ 136,541	22.99%	$ 28.31
Willow Valley Water	$ 284,370	26.69%	$ 3,526	$ -	$ 3,526	0.33%	$ 287,896	27.02%	$ 44.22
Total Company	$12,535,406	10.64%	$299,120	$ 3,591,963	$ 3,891,083	3.30%	$ 16,426,489	13.94%	

In addition to the foregoing, the Company is requesting (i) a purchased water adjustor mechanism ("PWAM") for its Agua Fria Water District; (ii) a revision to its approved power cost adjustor mechanisms ("PCAM"); and (iii) a power cost adjustor mechanism for the water districts that do not currently have approved mechanisms. These requests are discussed in the Direct Testimony of Jon P. Boizelle.

V. WITNESSES AND SUBJECT MATTER

Q. PLEASE IDENTIFY THE COMPANY'S WITNESSES WHO ARE PROVIDING DIRECT TESTIMONY IN SUPPORT OF EWAZ'S RATE APPLICATION IN THIS PROCEEDING.

A. The following witnesses are providing Direct Testimony on the following subject matters in support of this Application:

Witnesses:	**Topics:**
Thomas A. Loquvam	Company's recommendation for consolidation and identifies key considerations to contemplate in evaluating consolidation, Company's request regarding Post Test Year Plant, performance based compensation, adjustor mechanisms including the System Improvement Benefits Mechanism and power and water cost adjustors, and business risks faced by the Company
Andrew W. Brown	Major plant additions since last rate case, Service Line and Meter Installation Charges tariff, Hook-up Fees
Jeffrey W. Stuck	Operations – Descriptions of systems (Agua Fria Water, Anthem Water, Chaparral Water, Havasu Water, Mohave Water, North Mohave Water, Paradise Valley Water, Sun City Water, Sun City West Water, Tubac Water, & Willow Valley Water), cost savings to Mohave customers due to the North Mohave acquisition, improvements in non-revenue water stats, Tank Maintenance programs, Post Test Year Plant Additions (12 months), discussion of Brooke Water
Sheryl L. Hubbard	Overview of application and reasons for rate increase, required "A" and "D" schedules, Cost of debt, Capital structure, rate case expenses, taxability of AIAC/CIAC, and treatment of Excess ADIT
Sandy L. Skoubis	Assigned "C", "E", & "F" schedules and assigned *pro forma* adjustment in the "C" schedules,, regulatory assets and liabilities, and proposed tariffs including Miscellaneous Service Charges.
Jon P. Boizelle	Assigned "B" schedules, including Post Test Year Plant, Reconstruction Cost New Depreciated (RCND) Study. Assigned p*ro forma* adjustments in the "C" schedules

	including revenue adjustments, "H" schedules (Billing Determinants), new and modified power cost adjustors, new purchased water adjustor and associated Plans of Administration. Proposals for recovery of the North Mohave & Willow Valley acquisition premiums.
Dylan W. D'Ascendis (Scott Madden)	Cost of Equity; Fair Value Rate of Return
Bickey Rimal (Concentric)	"G" Schedules - Cost of Service Study ("COSS"), "H" Schedules (Rate Design); Weather Normalization
John F. Guastella (Guastella & Assoc.)	Review/Recommend new depreciation rates, cost of removal and salvage rates, if necessary

VI. SPONSORED SCHEDULES

Q. PLEASE IDENTIFY THE SCHEDULES YOU ARE SPONSORING.

A. I am sponsoring the following schedules for the Company:

- Schedule A-1 –Computation of Increase In Gross Revenue Requirements
- Schedule A-2 – Summary of Operations
- Schedule A-3 – Summary of Capital Structure
- Schedule A-4 – Construction Expenditures and Gross Utility Plant in Service
- Schedule A-5 – Summary of Cash Flows
- Schedule D-1 – Summary of Cost of Capital
- Schedule D-2 – Cost of Long-Term Debt
- Schedule D-3 – Cost of Preferred Stock
- Schedule D-4 – Cost of Common Equity
- Schedule E-4 – Statement of Changes in Stockholder's Equity

Q. WERE THESE SCHEDULES PREPARED BY YOU OR UNDER YOUR SUPERVISION?

A. Yes.

1. "A" SCHEDULES – SUMMARY SCHEDULES (ALL DISTRICTS)

Q. PLEASE EXPLAIN SCHEDULE A-1.

A. Schedule A-1 titled "Computation of Increase In Gross Revenue Requirements" shows the calculation of the increase in the gross revenue requirement. The proposed change in gross revenues that the Company has determined is necessary to continue to provide safe and reliable water services to its customers while

providing the Company an opportunity to earn a reasonable rate of return on its investments dedicated to utility service in these 11 water districts is summarized on Schedule A-1. For purposes of this proceeding, the increase in the gross revenue requirement for the districts included in this Application is based on a test year ending December 31, 2019, and totals $12,535,406 as summarized in Table 4 below.

Table 4 – Gross Revenue Increase Requested (Excluding Rate Case Expense and Taxes on CIAC Surcharges)

District	Revenue Increase
Agua Fria Water	$ 5,047,375
Anthem Water	1,281,945
Chaparral Water	470,294
Havasu Water	159,150
Mohave Water	1,539,130
North Mohave Water	392,750
Paradise Valley Water	1,623,100
Sun City Water	1,299,356
Sun City West Water	303,660
Tubac Water	134,276
Willow Valley Water	284,370
EPCOR Water Arizona	$ 12,535,406

Q. PLEASE EXPLAIN SCHEDULE A-2.

A. Schedule A-2 titled "Summary Results of Operations" contains operating history for the unadjusted and adjusted test year ended December 31, 2019, calendar years 2018 and 2017, as well as projected year 2020 for each district. The test year 2019 figures on this exhibit are presented unadjusted as recorded in the accounting records of the Company, and adjusted for the *pro forma* changes identified in the Company's Application.

Q. PLEASE EXPLAIN SCHEDULE A-3.

A. Schedule A-3 titled "Summary of Capital Structure" summarizes the debt and equity of the Company allocated to the individual districts for test year ending December 31, 2019, and the calendar years 2018 and 2017, as well as projected year 2020 for each district. The test year 2019 figures are presented unadjusted as well as adjusted for *pro forma* changes recommended in the Company's Application.

Q. PLEASE EXPLAIN SCHEDULE A-4.

A. Schedule A-4 is titled "Construction Expenditures and Gross Utility Plant in Service". This schedule presents the historical construction expenditures for the test year ending December 31, 2019, and calendar years 2018 and 2017, as well as three years of projected construction expenditures for the districts. This schedule also contains annual cost data for net plant placed in service and balances of gross utility plant in service for the same time periods provided for construction expenditures. Company witness, Mr. Andrew D. Brown, will discuss capital expenditures through the test year and Company witness, Mr. Jeffrey W. Stuck, will address capital expenditures during the post-test year (2020) in this proceeding.

Q. PLEASE EXPLAIN SCHEDULE A-5.

A. For each district, Schedule A-5 titled "Summary Statements of Cash Flows" is a statement of cash flows detailing the changes in the cash accounts for test year ending December 31, 2019, and calendar years 2018 and 2017 as well as for the projected year 2020 based on a present rate analysis and a proposed rate analysis.

2. "D" SCHEDULES – COST OF CAPITAL (ALL DISTRICTS)

Q. WHAT IS THE REQUESTED COST OF CAPITAL IN THIS PROCEEDING?

A. EWAZ's proposed weighted average cost of capital ("WACC") based on its requested capital structure for the test year is 7.32% for all districts except for Tubac which is 6.48%, which are calculated on the "D" Schedules that I am sponsoring. EWAZ's requested test-year capital structure for all districts excluding Tubac Water District is 49.66% long-term debt and 50.34% equity. For the Tubac Water District, the inclusion of a Water Infrastructure Financing Authority of Arizona ("WIFA") loan in long-term debt modifies the capital structure for that district to a 73.12% long-term debt and 26.88% equity.

EWAZ's cost of long-term debt is 4.38% and the proposed cost of equity is 10.24%. The Company's WACC, based on these cost rates and the actual test year capital structure of 49.66% debt and 50.34% equity, is 7.32%.

EWAZ is proposing a total Company fair value rate of return ("FVROR") of 6.20% based on the methodology long-recognized and adopted by the Commission.

Q. PLEASE IDENTIFY THE "D" SCHEDULES THAT YOU ARE SPONSORING.

A. In this proceeding, I am sponsoring Schedules D-1 through D-4 that provide the overall cost of capital and its component details – summary of cost of capital (Schedule D-1), cost of debt (Schedule D-2), cost of preferred stock (Schedule D-3), and cost of equity (Schedule D-4) for the EWAZ total Company as well as for

each individual district. The cost of debt schedule, Schedule D-2, is only needed on a total Company basis.

Q. PLEASE DISCUSS SCHEDULE D-2 AND THE COMPANY'S CALCULATED COST OF DEBT?

A. The cost of Short-Term Debt and Long-Term Debt is set forth on Schedule D-2. At the end of the test year, EWAZ had long-term debt outstanding of $261,831,726 comprised of a 10-year note of $133,000,000, three 30-year notes totaling $126,560,000, an 8-year note of $1,755,000, and a WIFA note of $516,726. Decision No. 72668 (November 17, 2011) authorized EWAZ to refinance all of the then existing long-term debt as part of the purchase by EUSA. The refinancing was completed in 2012 with a weighted cost of debt adjusted for debt-issuance costs of 4.29%.

Decision No. 74388 (March 19, 2014) authorized Chaparral to refinance its Industrial Development Authority ("IDA") bond outstanding at that time with long-term debt with a cost rate of 5.152% including debt issuance costs. Both the original debt and the replacement debt are mortgage-type financing that include principal payments as well as semi-annual interest payments, which translates into a declining outstanding balance. At December 31, 2019, the 8-year note had an outstanding balance of $1,755,000.

Schedule D-2 displays an average cost of long-term debt as of the end of the test year (December 31, 2019) of 4.38% for all outstanding long-term debt excluding the outstanding WIFA debt assigned to Tubac in previous rate cases.

Q. WHAT IS THE RECOMMENDED COST OF EQUITY?

A. The recommended cost of equity is 10.24% and is shown both on Schedule D-4 titled "Cost of Common Equity" and on Schedule D-1 titled "Summary of Cost of Capital". Mr. Dylan W. D'Ascendis's Direct Testimony on behalf of the Company supports this cost of equity as fair and reasonable. Mr. D'Ascendis is also sponsoring return on the fair value increment of 0.93%.

Q. DOES EWAZ HAVE ANY PREFERRED STOCK OUTSTANDING?

A. No. Schedule D-3 titled "Cost of Preferred Stock" states that the schedule is not applicable because there is no preferred stock outstanding.

VII. SPECIFIC REQUESTS FOR COMMISSION APPROVAL

Q. PLEASE PROVIDE A SUMMARY OF THE SPECIFIC REQUESTS FOR WHICH THE COMPANY IS SEEKING COMMISSION APPROVAL IN THIS PROCEEDING.

A. There are several areas for which the Company is seeking specific Commission approval. The Company's requests can be broken down into fourteen major categories:

1) Approval of requested revenue increase including a determination of its proposed fair value rate base based on it RCND study, fair value rate of return and its adjusted operating income;
2) Inclusion of revenue-neutral post-test year plant additions through December 31, 2020 that will provide service to test year customers;
3) Approval of proposed depreciation rates;
4) Approval to institute a purchased water adjustor mechanism for the Agua Fria Water District that does not yet have this pass-through adjustor;

5) Approval of a modified power cost adjustor mechanism for those districts that currently have power cost adjustors and approval of power cost adjustor mechanisms for those districts that do not yet have these pass-through adjustors;

6) Approval of continued deferral of costs associated with the Deployed Service Member Credit Program and the Disabled Military Veteran Credit Program;

7) Approval of recovery of deferred tank maintenance expenditures in Anthem and request for deferral of future tank maintenance expenditures for Willow Valley and Brooke Water;

8) Approval of three requests for deferral accounting for continued deferral of costs associated with (i) the DSMC program; (ii) the DMVC program; and (iii) Anthem's tank maintenance program, as well as new requests to defer tank maintenance costs for Willow Valley;

9) Approval of proposed rate design including several modifications to the Company's general service tariffs for Agua Fria (eliminate non-firm treatment services and the hook-up fee (Part B)), miscellaneous service charges, service line and meter installation fees, and modifications to hook up fee tariffs;

10) Facilitation of an in-depth discussion amongst stakeholders regarding (i) how consolidation might be appropriate; and (ii) whether any degree of consolidation can be implemented in a way that mitigates or even fully addresses some or all of the objections to consolidation of certain customers, while maintaining the support of consolidation expressed by other customers. If, based on that stakeholder input, the Commission determines it is in the public interest to do so, the Company would support (i) some consolidation

now to the extent consistent with the public interest and (ii) guidance as to how full consolidation can be designed and implemented over the long-term;

11) Approval of the request to recover rate case expenses through a surcharge;

12) Approval to recover the new taxes on AIAC and CIAC through an adjustor mechanism;

13) Approval to recover acquisition premiums for the purchases of the assets of North Mohave Valley Corporation and the Willow Valley Water Company; and

14) Approval to eliminate compliance requirements from previous Commission decisions that are now obsolete.

In this section, I will describe some of the proposals in the first four categories.

1. REQUESTED REVENUE INCREASE

Q. PLEASE SUMMARIZE THE COMPANY'S PROPOSED REVENUE INCREASE.

A. The Company's requested base revenue increase is $12,535,406. This is based on a Fair Value Rate Base ("FVRB") of $528,080,678 and a test year Adjusted Operating Income of $23,412,718 for all of the water districts. In this Application, the Company proposes a weighted average cost of capital of 7.32 percent with the fair value rate of return of 0.93 percent. Within each of these elements, the Company requires Commission approval of the individual components that comprise these amounts. Table 5 summarizes the Company's base rate proposal for each district.

Table 5 – Summary of Base Revenue Request by District

Water District	Fair Value Rate Base	Test Year Operating Income	Revenue Increase	% Increase	Bill Impact Residential 5/8-inch with usage of 7,000 Gallons
Agua Fria Water	$ 158,459,990	$ 6,504,696	$ 5,047,375	12.40%	$ 7.38
Anthem Water	$ 71,703,632	$ 3,283,896	$ 1,281,945	10.08%	$ 19.28
Chaparral Water	$ 52,717,997	$ 2,728,739	$ 470,294	3.72%	$ 5.65
Havasu Water	$ 10,596,957	$ 502,336	$ 159,150	5.10%	$ 16.18
Mohave Water	$ 43,326,567	$ 1,537,526	$ 1,539,130	15.86%	$ 8.08
North Mohave Water	$ 5,474,690	$ 92,343	$ 392,750	27.38%	$ 14.91
Paradise Valley Water	$ 63,877,326	$ 2,703,413	$ 1,623,100	15.27%	$ 11.15
Sun City Water	$ 69,642,832	$ 3,524,016	$ 1,299,356	8.21%	$ 1.63
Sun City West Water	$ 46,220,605	$ 2,474,160	$ 303,660	3.24%	$ 0.49
Tubac Water	$ 1,432,566	$ (24,217)	$ 134,276	22.61%	$ 28.06
Willow Valley Water	$ 4,627,516	$ 85,810	$ 284,370	26.69%	$ 43.74
Total Company	$ 528,080,678	$ 23,412,718	$ 12,535,406	10.64%	

Q. WHICH COMPANY WITNESS IS SPONSORING THE FVRB OF $528,080,678?

A. Mr. Boizelle is the Company's witness who is sponsoring the FVRB as well as the Original Cost Rate Base ("OCRB") and the Reconstructed Cost New Depreciated ("RCND") Rate Base.

Q. WHAT IS THE COMPANY REQUESTING REGARDING FVRB?

A. The Company requests the following determinations regarding FVRB:

(1) a determination of its FVRB and FVROR based on its RCND study, fair value rate of return and its adjusted operating income;

(2) inclusion of the requested revenue-neutral post-test year plant additions through December 31, 2020 that are used and useful and providing service to test-year customers;

(3) the recovery of acquisition premiums for the purchases of the assets of North Mohave Valley Corporation and the Willow Valley Water Company.

Q. HAS THE COMPANY PROPOSED *PRO FORMA* ADJUSTMENTS TO RATE BASE TO RECOGNIZE REGULATORY ASSETS PREVIOUSLY AUTHORIZED BY THE COMMISSION IN PREVIOUS DECISIONS?

A. Yes. Ms. Sandra L. Skoubis discusses the individual Commission decisions and the resulting *pro forma* adjustments to reflect the unamortized balances of previously-authorized regulatory assets and regulatory liabilities that have been included in the calculation of the Company's OCRB and RCND in developing the requested FVRB.

A. <u>Post-Test Year Plant Additions.</u>

Q. PLEASE EXPLAIN WHY THE COMPANY IS REQUESTING TO INCLUDE POST-TEST YEAR PLANT ADDITIONS THAT WILL BE IN SERVICE BY DECEMBER 31, 2020 – TWELVE MONTHS AFTER THE END OF THE TEST YEAR.

A. EWAZ has increased its capital investment plans in response to significant infrastructure deterioration in its water districts. Without this needed investment, the Company's ability to continue to provide safe and reliable service would be at risk. As Mr. Jeffrey W. Stuck details in his Direct Testimony, the projects identified are necessary to continue providing safe and reliable service to existing customers. Requesting inclusion of plant completed by December 31, 2020 and serving test-year customers still enables verification by the Commission Utilities Division Staff ("Staff") that the plant is in service, and used and useful, before hearings will be conducted in this case. As discussed in greater detail in the Direct

Testimony of Mr. Thomas A. Loquvam, including 12 months of post-test year plant strengthens utility health and provides other benefits to the Company's customers.

B. Acquisition Premiums.

Q. PLEASE DISCUSS THE ADJUSTMENTS TO INCLUDE TWO ACQUISITION PREMIUMS THAT THE COMPANY IS SEEKING TO RECOVER IN THIS PROCEEDING.

A. In 2014, EWAZ acquired the assets of the North Mohave Valley Corporation. In this case, as Mr. Boizelle discusses in his Direct Testimony, the Company is requesting recovery of the 10 percent premium of $225,234 paid for the North Mohave system from North Mohave customers. In addition, the Company seeks approval of an additional $950,000 premium for the North Mohave assets. The Company does not make this request for itself—it will not retain any of the $950,000 portion of the acquisition premium but would retain the $225,234 premium paid. Instead, this portion of the acquisition premium will be paid to the prior owners of the North Mohave system to recognize the significant benefit that the North Mohave system provides to the Mohave system.

With the acquisition of the North Mohave system, the Company was able to forego investing in new sources of supply for the Mohave Water District customers. As such, it is appropriate that those who benefited from this acquisition—the Mohave Water District customers—should be responsible for this premium.

Additionally, in 2016, EWAZ acquired the assets of the Willow Valley Water Company and paid a premium above the book value for the purchase. In Decision

No. 75484 (March 10, 2016), the Commission stated that "we believe it is reasonable and appropriate to defer consideration of recovery of the Acquisition Premium until Willow Valley's next rate case." As discussed in the Direct Testimony of Mr. Boizelle, the Company is requesting recovery of the acquisition premium paid by including the premium in rate base with an associated amortization to expense.

2. PROPOSED DEPRECIATION RATES

Q. HAS THE COMPANY CONDUCTED AN INDEPENDENT DEPRECIATION STUDY IN ACCORDANCE WITH THE COMMISSION'S ORDER IN DECISION NO. 75268?

A. Yes. The Company engaged the assistance of Mr. John F. Guastella of Guastella Associates, LLC to review the Company's depreciation rates and practices for all of the 11 water districts in connection with this rate case filing. Mr. Guastella details the results of his analysis in his Direct Testimony.

Q. IS EWAZ REQUESTING APPROVAL BY THE COMMISSION OF REVISED DEPRECIATION RATES IN THIS APPLICATION?

A. Yes. In the process of evaluating the Company's depreciation rates for the districts subject to Decision No. 75268, Mr. Guastella determined that modifications to depreciation rates were prudent at this time. Exhibit JFG-1, attached to the Direct Testimony of Mr. John F. Guastella, sets forth the rates that the Company is asking the Commission to approve.

In summary, the rates that Mr. Guastella is recommending generally recognize the appropriateness of the depreciation rates previously recommended by Commission

Staff for water utilities, except for certain limited accounts as explained in further detail in Mr. Guastella's testimony.

To accommodate the Company's goal of mitigating the magnitude of its proposed rate increase in this Application, however, Mr. Guastella stops short of fully adopting Staff's previously proposed rates in this rate case. Instead, Mr. Guastella has applied his judgment to his comparative database of reasonable depreciation rates and Staff's average service lives ("ASL") and is recommending lives that will gradually align the Company's current depreciation rates closer to the ASLs that the Staff recommends. If EWAZ's current proposal is approved, EWAZ anticipates that in its next rate case, the Company will propose that the depreciation rates recommended in 2017 based on Staff's recommended average service lives be adopted.

3. PROPOSED ADJUSTOR MECHANISMS

Q. IS THE COMPANY REQUESTING APPROVAL OF ANY ADJUSTOR MECHANISMS FOR THE DISTRICTS IN THIS APPLICATION?

A. Yes. The Company is requesting approval of adjustor mechanisms for a purchased water adjustor in its Agua Fria Water District, a power cost adjustor mechanisms in its water districts that do not already have one approved by the Commission (Agua Fria, Anthem, Chaparral, Havasu, North Mohave, Sun City West, and Willow Valley) and an adjustor for the taxes on AIAC and CIAC. Mr. Boizelle discusses the Company's requests for the purchased water adjustor and the power cost adjustor mechanisms in his Direct Testimony. I will discuss the adjustor for taxes on AIAC and CIAC.

Q. HAS THE COMMISSION AUTHORIZED ANY OF THESE MECHANISMS FOR EWAZ IN PRIOR COMMISSION DECISIONS?

A. Yes. In Decision No. 74568, the Commission authorized a purchased water adjustor mechanism for Chaparral. In Decision No. 75268, the Commission authorized a Power Cost Adjustor Mechanism ("PCAM") for Mohave, Paradise Valley, Sun City and Tubac.

Also noteworthy as it applies to EWAZ, in Decision No. 76162 in the Company's last wastewater rate case (Docket No. WS-01303A-16-0145), the parties to the Settlement Agreement agreed to, and the Commission approved, the Company's request for an adjustor mechanism for purchased power costs.

4. DEFERRAL ACCOUNTING AUTHORIZATION

Q. PLEASE DISCUSS THE COMPANY'S REQUESTS FOR DEFERRAL ACCOUNTING.

A. The Company is seeking authorization to defer some costs related to previously approved customer assistance programs, as well as future tank maintenance expenditures in the Willow Valley Water District.

Q. PLEASE DISCUSS THE COMPANY'S REQUEST FOR DEFERRAL ACCOUNTING AUTHORIZATION AS IT RELATES TO CUSTOMER ASSISTANCE PROGRAMS.

A. In Decision No. 77147 (issued April 16, 2019), the Commission directed the Company to implement three customer assistance programs: (1) Deployed Service Member Credit Program ("DSMC"); (2) Disabled Military Veteran Credit ("DMVC") Program; and (3) Low-Income Program ("LIP"). The Commission authorized the Company to track and defer the costs relating to the DSMC and

DMVC Programs for consideration in a future rate case. These programs have only been in effect for nine months in the test year. The Company is seeking to continue deferring the costs related to its DSMC and the DMVC for recovery in a subsequent rate case when the programs are more reflective of the interest level expected of customers for these programs. In other words, the Company is not requesting to recover the costs associated with these deferrals in this case, and is instead seeking continued authority to defer those costs for possible recovery in a future water rate case.

Q. AS OF THE END OF THE TEST YEAR, WHAT ARE THE TOTAL PROGRAM COSTS THAT HAVE BEEN DEFERRED?

A. As of December 31, 2019, no costs have been deferred for the DSMC Program and $7,610 has been deferred Company-wide for the DMVC Program with the largest participation occurring in Agua Fria (96), Mohave (69), and Sun City (45) as of the end of the test year.

Q. TURNING TO THE TANK MAINTENANCE DEFERRAL REQUEST, HAS EWAZ BEEN AUTHORIZED TO NORMALIZE ITS TANK MAINTENANCE EXPENSES IN MOST (BUT NOT ALL) OF ITS DISTRICTS?

A. Yes. Currently, the Company has Commission authorization for tank maintenance programs in Agua Fria, Havasu, Mohave, Paradise Valley, and Sun City Water Districts. The costs of these programs have been normalized over varying periods of time and included in the calculation of the revenue requirement. The Commission has previously approved deferral accounting in the case of the Anthem Water District and the Company is requesting approval of the

amortization of tank maintenance expenses incurred during the test year for that district in this rate application as discussed in the Direct Testimony of Mr. Boizelle.

Q. WHY IS EWAZ REQUESTING AUTHORIZATION FOR DEFERRAL ACCOUNTING FOR TANK MAINTENANCE EXPENSES FOR ITS WILLOW VALLEY WATER DISTRICT?

A. For Willow Valley, the Company completed tank maintenance on one of its two storage tanks within that district in 2017. It has not scheduled the maintenance on the second tank at the time of preparing this testimony. Instead of trying to normalize the cost to maintain the second tank, the Company is requesting authorization from the Commission to defer the costs it will incur for this maintenance for future recovery from its customers. The Company is requesting a deferral because it has not had enough of a continual tank maintenance program in this district to provide the basis for a reasonable normalized expense level. Mr. Stuck also discusses the Willow Valley tank maintenance deferral in his Direct Testimony.

Q. SUBJECT TO APPROVAL OF THE BROOKE WATER ACQUISITION, IS THE COMPANY ALSO REQUESTING AUTHORIZATION FOR DEFERRAL ACCOUNTING FOR TANK MAINTENANCE EXPENSES FOR THE BROOKE WATER STORAGE TANKS?

A. Yes, as explained by Mr. Stuck in his Direct Testimony, without experience with the Brooke Water system, it would be difficult to put together an estimate of a tank maintenance plan for this system. Therefore, assuming Commission approval and subject to the completion of that acquisition, the Company is requesting

authorization to defer any required tank maintenance expenditures for recovery in a future rate case.

Q. ARE THERE ANY NEW DISTRICTS FOR WHICH THE COMPANY IS REQUESTING TO NORMALIZE THE EXPENSES FOR TANK MAINTENANCE PROGRAMS?

A. Yes. The Company is seeking to normalize the expenses for its tank maintenance programs for its North Mohave and Sun City West Water Districts. These programs are addressed in the Direct Testimony of Mr. Jeffrey W. Stuck.

5. LOW INCOME PROGRAMS

Q. HAS THE COMPANY INCLUDED A FUNDING MECHANISM FOR THE LOW-INCOME PROGRAM ("LIP") IN ITS PROPOSED RATE DESIGN IN THIS CASE?

A. Yes. The funding mechanism for the LIP is a surcharge added to the high block rates for each district. The water districts' Plans of Administration ("POA") provides for an annual true-up calculation and adjustment of the surcharge annually. The POA requires a filing every first day of March for the annual true up. The Company's proposed rate design includes the addition of the current LIP surcharge to the high block commodity rate for all 11 districts, and will be adjusted if necessary through the course of subsequent filings in this case if the surcharges are adjusted in March of 2021.

Q. ARE THERE OTHER FACTORS THAT INFLUENCE THE COMPANY'S REQUEST PERTAINING TO THE LIP AT THIS TIME?

A. Yes. Due to the economic impacts being felt by the Company's customers related to the COVID-19 pandemic and stay at home orders, the Company has

implemented its plan to not only provide some shareholder funds to assist its customers, but also to use some of the funds available through its low income program to assist customers. The details are described in an April 3, 2020 letter the Company filed in Docket No. AU-00000A-20-0050. The current directives regarding the pandemic could change or be extended for additional time and proposing alternate plans at this time may not be sustainable.[2]

VIII. RATES AND TARIFFS

Q. WHICH COMPANY WITNESSES ARE SPONSORING TESTIMONY REGARDING THE PROPOSED RATES AND TARIFFS?

A. For the Company's proposed stand-alone rate design, Mr. Bickey Rimal is sponsoring the rates for each water district. In addition, Mr. Rimal is sponsoring the "H" schedules except for the H-5 Schedule, which is the responsibility of Mr. Boizelle.

The Company, through the Direct Testimony of Ms. Skoubis, is seeking to standardize its miscellaneous service charges for all of its districts.

Changes requested to the Company's hook-up fees and service line and meter installation charges are being sponsored by Mr. Andrew W. Brown.

Q. ARE THERE OTHER TARIFF REQUESTS THE COMPANY IS SEEKING IN THIS CASE?

[2] See EWAZ's filing in Docket No. AU-00000A-20-0050 on April 3, 2020 (available at https://docket.images.azcc.gov/E000005758.pdf)

A. Yes. The Company is requesting approval from the Commission to eliminate the Part B Hook-up fee and Non-Firm treatment services tariffs in the Agua Fria Water District.

Q. PLEASE EXPLAIN THE AGUA FRIA WHITE TANKS HOOK-UP FEE (PART B) TARIFF.

A. The White Tanks hook-up fee (Part B) tariff provides a reduction to the revenue requirement in Agua Fria on an annual basis as hook-up fees are collected from developers in that district. As part of the settlement agreement in Agua Fria's last rate case adopted in Decision No. 73145 (May 1, 2012), a hook-up fee was instituted to enable a contribution to the cost of the White Tank's Water Treatment Plant ("WTP") from new development that would occur after the decision in that case. In its current form, Agua Fria's customers are eligible to receive surcredits on their monthly bills in recognition of developer contributions (hook-up fees) received to fund the White Tanks WTP. The first surcredits were effective July 1, 2013, and are calculated on an annual basis, and applied as a monthly surcredit on customer bills.

Q. WHAT IS EWAZ'S PROPOSAL REGARDING THE AGUA FRIA HOOK-UP FEE (PART B)?

A. EWAZ is proposing to eliminate the secondary (Part B) hook-up fee tariff in Agua Fria. The White Tanks WTP is now fully utilized by customers. The Company has reflected the test-year balance of Part B hook-up fees in its calculation of rate base; and the corresponding reduction to the calculated revenue requirement is reflected in Schedule A-1. No further collection of these hook-up fees is necessary upon issuance of a decision in this proceeding. EWAZ is also

requesting approval to discontinue the compliance requirements related to White Tanks hook-up fees ordered in Decision No. 73145 because they are no longer necessary due to the full utilization of the White Tanks WTP. Ms. Skoubis discusses this request in her Direct Testimony. The compliance items the Company proposes to eliminate are included on Exhibit SLS-1 attached to Ms. Skoubis's testimony.

Q. BECAUSE OF THE FULL UTILIZATION OF THE WHITE TANKS WTP, IS EWAZ ALSO REQUESTING THAT THE COMMISSION ELIMINATE THE REPORTING REQUIREMENT IN DECISION NO. 73145 REGARDING NON-FIRM TREATMENT SERVICES FROM THE WHITE TANKS WTP?

A. Yes. White Tanks WTP to which this reporting requirement is intended is fully utilized and does not have capacity available for non-firm treatment services. As such, it is appropriate for the Commission to eliminate this reporting requirement.

Q. HAS THE COMPANY INCLUDED CONSOLIDATION SCENARIOS AS DIRECTED BY THE COMMISSION IN THE INTERIM RATE DECISION?

A. Yes, and the Company's position on the consolidation scenarios is presented in detail by Mr. Loquvam in his Direct Testimony.

IX. KEY ISSUES AND ADDITIONAL REQUESTS.

Q. ARE THERE ANY ADDITIONAL REQUESTS THAT THE COMPANY HAS IDENTIFIED IN THIS APPLICATION THAT REQUIRE COMMISSION APPROVAL?

A. Yes. The additional requests that I am sponsoring for which the Company is seeking Commission approval include the recovery of rate case expenses through a surcharge and the new taxes resulting from the 2017 TCJA's taxability of AIAC and CIAC through an adjustor mechanism.

1. RATE CASE EXPENSES (ALL DISTRICTS).

Q. WHAT IS EWAZ'S PROPOSED RATE CASE EXPENSE FOR THIS PROCEEDING?

A. When the Commission approved interim rates in lieu of a decision on permanent rates in the 2017 case (Docket No. WS-01303A-17-0257), there was no provision for the recovery of rate case expenses from either that case or the interim rate case (Docket No. WS-01303A-19-0011). As a result, the Company is requesting recovery of the $695,418 of rate case expenses incurred in processing both the 2017 rate case and the interim rate case, as well as an additional estimate of $800,180 for this case, for a total of $1,495,598. These rate case expenses are applicable to each water district and were allocated based on a water only 4-factor allocation methodology. The Company is proposing to amortize rate case expenses over a five-year period via a surcharge that would end if the expenses are recovered in full before the five-year period expires. The proposed surcharges for each of the individual water districts are summarized on Exhibit SLH-1.

Q. HOW DID THE COMPANY CALCULATE THE EXPENSE FOR THE CURRENT RATE CASE?

A. The rate case expenses for this current rate application were estimated based on the Company's experience litigating rate cases before the Commission, the number of districts included in this Application, and the anticipated length and complexity of the proceedings. If the processing of this Application turns out to

be more complicated than anticipated, the Company will modify its request to account for any additional expenses. Conversely, if rate case expense is lower than estimated, an appropriate adjustment downward during the briefing stage of the case will be offered. The estimated expenses to process the current rate application of $800,180 has been added to the actual rate case expenses incurred to process Docket Nos. WS-01303A-17-0257 and WS-01303A-19-0011. The charge per thousand gallons for each district is summarized in Table 9 below.

Table 6. Proposed Rate Case Recovery Surcharge

Water District	Rate Case Expense (Per Year for 5 Years)	% Increase	Usage (Kgals)	Cost per Kgal
Agua Fria Water	$ 113,768	0.28%	7,199,634	$ 0.0158
Anthem Water	$ 27,308	0.21%	991,996	$ 0.0275
Chaparral Water	$ 29,346	0.23%	1,647,503	$ 0.0178
Havasu Water	$ 5,824	0.19%	280,322	$ 0.0208
Mohave Water	$ 30,770	0.32%	1,623,754	$ 0.0189
North Mohave Water	$ 3,938	0.27%	280,160	$ 0.0141
Paradise Valley Water	$ 18,924	0.18%	3,052,070	$ 0.0062
Sun City Water	$ 41,864	0.26%	3,966,322	$ 0.0106
Sun City West Water	$ 21,587	0.23%	1,616,856	$ 0.0134
Tubac Water	$ 2,265	0.38%	63,472	$ 0.0357
Willow Valley Water	$ 3,526	0.33%	51,083	$ 0.0690
Total Company	$ 299,120	0.25%	20,773,172	$ 0.0144

2. ACCUMULATED DEFERRED INCOME TAXES ("ADIT")

Q. THE 2017 TAX CUTS AND JOBS ACT REDUCED THE FEDERAL INCOME TAX RATE FROM 35% TO 21%. WHAT ARE THE IMPACTS OF THE REDUCED TAX RATE ON EWAZ'S ADIT BALANCE?

A. When the federal income tax rates change, it impacts the carrying value of the ADIT on a Company's balance sheet. When the income tax rate decreases as was the case with the passage of the 2017 Tax Cuts and Jobs Act ("2017 TCJA"), an

excess ADIT balance results. In compliance with the Internal Revenue Service's normalization rules associated with the use of accelerated depreciation methods for income tax purposes, regulated utilities are required to amortize the excess ADIT using the average remaining life of the assets that generated the ADIT. In January 2018, EWAZ quantified the portion of its ADIT that is associated with the reduction in the tax rate and this excess ADIT was reclassified to a regulatory liability account and the unamortized balance at the end of the test year is reflected as a reduction to rate base in rate base ADJ SLS-RB12 on Schedule B-2. Also at that time, EWAZ computed an annual amortization based on the average remaining life of its assets, or 25 years. The annual amortization is included on Schedule C-2 as a reduction to the Depreciation and Amortization expense account through ADJ SLS-IS21 in the calculation of adjusted operating income. The regulatory liability and associated amortization expenses have been allocated to the individual water districts based on the general metered customers component of the 4-factor allocation consistent with other rate base elements that require allocations at the EWAZ corporate level.

Q. WILL THE EWAZ AMORTIZATION AMOUNTS DETERMINED IN THIS CASE CHANGE IN SUBSEQUENT RATE CASES BROUGHT BEFORE THE COMMISSION?

A. No, EWAZ amounts should not. The excess ADIT balance is a one-time calculation at the time of the 2017 TCJA. The associated amortization is based on the assets average remaining life at that time as well. However, since these balances are allocated based on the individual district's customer counts in a rate case, those values could be revised slightly to account for changes in customer counts.

3. TAXABILITY OF AIAC AND CIAC

Q. THE 2017 TCJA CHANGED THE TAXABILITY OF AIAC AND CIAC WHICH IMPACTS EWAZ'S TAX LIABILITY. PLEASE DISCUSS THE CHANGE AS WELL AS THE IMPACT ON THE COMPANY.

A. A provision of the 2017 TCJA is inclusion of funds collected as AIAC and CIAC in the calculation of taxable income. Arizona state income taxes are based on the federal taxable income and accordingly will be impacted by this tax law change as well. AIAC and CIAC collections are unpredictable and change from year to year. This new provision of the 2017 TCJA will have a significant impact on EWAZ but due to its unpredictability, the Company believes that it would be prudent to adjust rates for this expense annually. The tax expense for the collections of AIAC and CIAC during the test year are summarized on Exhibit SLH-2.

Q. WHY WOULD IT BE BETTER FOR CUSTOMERS TO CAPTURE THE FLUCTUATING AMOUNT OF TAXES ON CIAC AND AIAC IN A NEW ADJUSTOR RATHER THAN THROUGH BASE RATES?

A. The changing magnitude of AIAC and CIAC year-to-year and even month to month means that the resulting tax liability will change too. Collecting a flat amount in base rates might result in the Company collecting too much from customers at times, and at other times collecting too little. A new, separate adjustor will result in the Company collecting only on those taxes that are paid. In addition, it is possible that the federal legislation making CIAC and AIAC taxable will be repealed. The State Legislature in Arizona could possibly revise the state taxes so that AIAC and CIAC collections would no longer be taxable. If either of these things happens, it will be much easier to flow through the savings to

customers immediately if the taxes on AIAC and CIAC are collected through a new, separate adjustor from the outset.

Q. PLEASE DESCRIBE HOW THIS NEW ADJUSTOR MECHANISM WILL WORK.

A. The Company is requesting approval from the Commission of an adjustor to recover annual taxes arising from this new tax expense. For 2019, EWAZ expects its federal and state taxes payable to be approximately $5,318,757. The portion applicable to the EWAZ water districts is approximately $3.6 million as shown in Table 10 below. A CIAC and AIAC Tax Adjustor Mechanism ("CTAM") that would enable the Company to adjust its annual collections of the associated tax expense to recognize fluctuations in the level of advanced and contributed funds and the corresponding changes in tax expenses paid as a reasonable solution to the collection from customers of this new expense

Table 7. 2017 TCJA - Taxes on AIAC / CIAC

Water District	Taxes on AIAC / CIAC (1 Year w Adjustor)	% Increase	Usage (Kgals)	Cost per Kgal
Agua Fria Water	$ 3,538,089	8.69%	7,199,634	$ 0.4914
Anthem Water	$ (285)	0.00%	991,996	$ (0.0003)
Chaparral Water	$ 12,958	0.10%	1,647,503	$ 0.0079
Havasu Water	$ 9,122	0.29%	280,322	$ 0.0325
Mohave Water	$ 36,801	0.38%	1,623,754	$ 0.0227
North Mohave Water	$ -	0.00%	280,160	$ -
Paradise Valley Water	$ 4,918	0.05%	3,052,070	$ 0.0016
Sun City Water	$ (9,116)	-0.06%	3,966,322	$ (0.0023)
Sun City West Water	$ (524)	-0.01%	1,616,856	$ (0.0003)
Tubac Water	$ -	0.00%	63,472	$ -
Willow Valley Water	$ -	0.00%	51,083	$ -
EPCOR Water Arizona	$ 3,591,963	3.05%	20,773,172	$ 0.1729

Q. THE COMPANY IS REQUESTING TO ELIMINATE THE AGUA FRIA HOOK-UP FEE (PART B). WILL THE ELIMINATION OF THIS TARIFF IMPACT THE TAXABILITY OF AIAC AND CIAC CALCULATIONS IN THE FUTURE?

A. Yes, it will. Any collections of hook-up fees associated with the Agua Fria Hook-up Fee (Part B) are subject to inclusion in the calculation of the Company's taxable income. Elimination of the Part B hook-up fee tariff will reduce CIAC collections and should have a corresponding impact on the amount of tax expense for EWAZ. Collecting this tax through a surcharge mechanism enables the Company to only collect the taxes that are paid to the IRS even though the tax may increase or decrease year over year. A CTAM will enable the Company to provide the benefit of those reductions in a timely fashion to customers. This is yet another reason the Company believes that an adjustor mechanism is appropriate for this cost recovery.

Q. HAS THE COMPANY PREPARED A PLAN OF ADMINISTRATION FOR THE ADJUSTOR MECHANISM?

A. Yes. The POA for the CTAM is attached to my testimony as Exhibit SLH-3.

Q. DOES THE POA ALSO HAVE SCHEDULES DETAILING HOW THE ADJUSTOR MECHANISM WILL BE CALCULATED?

A. Yes, it does.

Q. IN ADDITION, WILL THE COMPANY TRACK THIS AND OTHER IMPACTS OF THE 2017 TCJA FROM JANUARY 1, 2020?

A. Yes. The Company understands that Decision No. 76595 is the accounting order that authorized utilities in Arizona to set up regulatory asset and liability accounts

in response to the ongoing impacts of the 2017 TCJA from January 1, 2018 through the effective date of the order in this case.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

EXHIBIT SLH-1

District	Arizona Water 4-Factor	Estimated Rate Case Expense	Estimated Annual Rate Case Expense (for 5 Years)	All Usage	Cost per Kgal
Agua Fria Water	38.0343%	$ 568,840	$ 113,768	7,199,634	$ 0.0158
Anthem Water	9.1295%	$ 136,540	$ 27,308	991,996	$ 0.0275
Chaparral City Water	9.8110%	$ 146,732	$ 29,346	1,647,503	$ 0.0178
Havasu Water	1.9470%	$ 29,119	$ 5,824	280,322	$ 0.0208
Mohave Water	10.2869%	$ 153,850	$ 30,770	1,623,754	$ 0.0189
North Mohave Water	1.3165%	$ 19,689	$ 3,938	280,160	$ 0.0141
Paradise Valley Water	6.3266%	$ 94,621	$ 18,924	3,052,070	$ 0.0062
Sun City Water	13.9956%	$ 209,318	$ 41,864	3,966,322	$ 0.0106
Sun City West Water	7.2168%	$ 107,934	$ 21,587	1,616,856	$ 0.0134
Tubac Water	0.7573%	$ 11,327	$ 2,265	63,472	$ 0.0357
Willow Valley Water	1.1787%	$ 17,628	$ 3,526	51,083	$ 0.0690
	100.00%	$ 1,495,598	$ 299,120	20,773,172	
5 Year Amortization (Per Year)		$ 299,120			

EXHIBIT SLH-2

EPCOR Water Arizona Inc.
Docket No. WS-01303A-20-____
Taxable Advances and Contributions
For the test year ended December 31, 2019

Line	BU	District	Contributions Collected in 2019	Advances Less Refunds in 2019	Net AIAC/CIAC	Tax Rate	Taxes
1	7F	Agua Fria Water	14,481,186.92	(254,855.22)	14,226,331.70	24.87%	3,538,088.69
2	7K	Anthem Water	-	(1,144.80)	(1,144.80)	24.87%	(284.71)
3	6P	Chaparral City Water	50,700.00	1,404.00	52,104.00	24.87%	12,958.26
4	7U	Havasu Water	40,950.63	(4,271.93)	36,678.70	24.87%	9,121.99
5	7M	Mohave Water	741,259.23	(593,286.79)	147,972.44	24.87%	36,800.75
6	7Q	North Mohave Water	-	-	-	24.87%	-
7	7P	Paradise Valley Water	106,024.90	(86,252.06)	19,772.84	24.87%	4,917.51
8	7B	Sun City Water	767,410.95	(804,063.74)	(36,652.79)	24.87%	(9,115.55)
9	7D	Sun City West Water	518,401.16	(520,506.34)	(2,105.18)	24.87%	(523.56)
10	7T	Tubac Water	412,882.00	(412,882.00)	-	24.87%	-
11	7R	Willow Valley Water	-	-	-	24.87%	-
12		Total Water	17,118,815.79	(2,675,858.88)	14,442,956.91		3,591,963.38

EXHIBIT SLH-3

EPCOR Water Arizona Inc.
CIAC / AIAC Adjustor Mechanism
Plan of Administration

This Plan of Administration ("Plan") relates to the administration of EPCOR Water Arizona Inc.'s ("EWAZ" or the "Company") CIAC / AIAC Adjustor Mechanism ("Mechanism") for its proposed eleven Water Districts. The purpose of the Plan is to describe how EWAZ will administer the Mechanism as approved by the Arizona Corporation Commission in Docket No. WS-01303A-20-XXXX. This plan is being filed as required in Decision Number [Insert Decision Number] issued [Insert date of Decision]. The eleven Water Districts consist of Agua Fria Water, Anthem Water, Chaparral Water, Havasu Water, Mohave Water, North Mohave, Paradise Valley Water, Sun City Water, Sun City Water, Tubac Water and Willow Valley Water districts.

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I. Overview

EPCOR Water Arizona Inc. ("EWAZ" or "Company") is an Arizona public service corporation engaged in providing water and wastewater utility services in several different parts of Arizona pursuant to a Certificate of Convenience and Necessity granted by the Arizona Corporation Commission.

II. General Description

This document is the Plan of Administration ("POA") for recovery of income tax expense arising from the 2017 Tax Cuts and Jobs Act associated with the collection of Contributions in Aid of Construction ("CIAC") and Advances in Aid of Construction ("AIAC"). The CIAC / AIAC Tax Adjustor Mechanism ("CTAM") was approved for EWAZ by the Arizona Corporation Commission ("ACC" or "Commission") in Decision No. [Insert Decision Number] issued [Insert date of Decision]. The CTAM allows the Company to pass through the income tax expenses related to collections of CIAC and AIAC from Developers to the customers within the Company's respective water districts.

III. (CIAC / AIAC) Related Filings

A. The Company shall file with Docket Control an analysis of the impact of the tax expense for all taxable CIAC and AIAC collections on an annual basis. The first report will be based on the period [January 1, 2019] through [insert Decision Date] to allow for expenses paid on test year collections and any subsequent deferred tax expenses due to the taxability of CIAC / AIAC collections up through the Decision date. This report will be filed within 60 days of issuance of the decision in Docket No. WS-01303A-20-[Insert Docket Number of the Application], and then annually thereafter [within 60 days after the Company's due date for filing its income tax return including any extension authorized]. The adjustor will be effective upon approval by the Commission in Docket No. WS-01303A-20-[insert docket number in this case], and then annually thereafter.

B. EWAZ will provide the ACC with a spreadsheet detailing exactly how the Company calculated the CIAC/AIAC TAX Adjustor surcharge for all eleven water districts. This calculation will be based on any tax expense due to the taxability of CIAC / AIAC collections. The actual amounts recovered from or refunded to customers will be separately identified by EWAZ and recorded in a balancing account. As part of each annual filing, the Company will perform a reconciliation for the prior reporting period comparing the amounts recovered from / refunded to customers to the amount of increase / decrease in tax expense for that same period resulting in either an under / (over) recovery. This true-up amount will be included in the next annual calculation.

C. All revised schedules filed with the Commission pursuant to the provisions of this CIAC/AIAC Tax Adjustor Mechanism will be accompanied by documentation prepared by EWAZ in a format approved by the Utilities Division Staff of the Commission and will contain sufficient detail to enable the Commission Staff to verify the accuracy of EWAZ's calculations.

D. The initial surcharge will become effective upon approval by the Utilities Division Staff and administratively approved annually thereafter.

E. The Company will file a report annually with the Commission, detailing its CIAC/AIAC Tax Expense pertaining to its water districts.

F. The Company shall provide notice (in a form acceptable to Utilities Division Staff) of the rate increases or decreases to customers. This notice is intended to be provided to customers by direct mail, insert or electronically upon approval of the CTAM by the Commission. Customers will be noticed in the next billing cycle after the surcharge is approved. In subsequent years, customer will be notified of the change (increase or decrease) to the surcharge via a text notification on the bill messaging.

IV. Application to Water Customers

A. The calculated increases or decreases in rates for the each of the 11 Water Districts must amount to at least $.01 per thousand gallons, after rounding the calculation, before an adjustment to customers' bills can be made. If the calculation results in a positive or negative change of less than $.01 per thousand gallons, the CIAC/AIAC Tax expense surcharge will be carried over to the next reporting period. In the event of a carry over, any CIAC/AIAC Tax Expense adjustments billed to customers will be subject to true-up.

B. See Example attached as Exhibit 1 for a hypothetical calculation consistent with the proposed methodology.

EXHIBIT 1

Example (numbers are for illustrative purposes only):

Beginning with the CIAC/AIAC tax expenses paid for the Test Year and any subsequent annual tax reporting period, EWAZ will calculate and pass through that expense to our Water customers on a per thousand gallons sold in the prior calendar year basis by district. In the first year that will be accomplished by taking the taxable CIAC/AIAC collections net of advances refunded by district and multiplying that balance by the current federal and state effective tax rate of 24.87% to get the Total Amount of the tax expense by water district for the year. Note that the federal and state rates may vary to reflect any changes in tax rates that are approved by either state or federal entities. The amount of the 2019 tax expense is summarized in the table below:

BU	District	Net AIAC/CIAC	Tax Rate	Taxes
7F	Agua Fria Water	14,226,331.70	24.87%	3,538,088.69
7K	Anthem Water	(1,144.80)	24.87%	(284.71)
6P	Chaparral City Water	52,104.00	24.87%	12,958.26
7U	Havasu Water	36,678.70	24.87%	9,121.99
7M	Mohave Water	147,972.44	24.87%	36,800.75
7Q	North Mohave Water	-	24.87%	-
7P	Paradise Valley Water	19,772.84	24.87%	4,917.51
7B	Sun City Water	(36,652.79)	24.87%	(9,115.55)
7D	Sun City West Water	(2,105.18)	24.87%	(523.56)
7T	Tubac Water	-	24.87%	-
7R	Willow Valley Water	-	24.87%	-
	Total Water	14,442,956.91		3,591,963.38

The total Tax Expense will be billed to water customers as a volumetric (per kgal) surcharge to their water bills. The volumetric surcharge will be based on the total usage in kgals by district for the prior calendar year. Any over- or under- collection will be trued up in the next year's CIAC / AIAC surcharge calculation.

Water District	Taxes on CIAC / AIAC (1 Year w Adjustor)	% Increase	Usage (Kgals)	Cost per Kgal
Agua Fria Water	$ 3,538,089	8.69%	7,199,634	$ 0.4914
Anthem Water	$ (285)	0.00%	991,996	$ (0.0003)
Chaparral Water	$ 12,958	0.10%	1,647,503	$ 0.0079
`Havasu Water	$ 9,122	0.29%	280,322	$ 0.0325
Mohave Water	$ 36,801	0.38%	1,623,754	$ 0.0227
North Mohave Water	$ -	0.00%	280,160	$ -
Paradise Valley Water	$ 4,918	0.05%	3,052,070	$ 0.0016
Sun City Water	$ (9,116)	-0.06%	3,966,322	$ (0.0023)
Sun City West Water	$ (524)	-0.01%	1,616,856	$ (0.0003)
Tubac Water	$ -	0.00%	63,472	$ -
Willow Valley Water	$ -	0.00%	51,083	$ -
EPCOR Water Arizona	$ 3,591,963	3.05%	20,773,172	$ 0.1729

EPCOR Water Arizona Inc.
Docket No. WS-01303A-20-XXXX
Test Year Ended December 31, 2019

EPCOR Direct Testimony

Mr. Andrew D. Brown

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

ROBERT "BOB" BURNS, Chairman
BOYD DUNN
SANDRA D. KENNEDY
JUSTIN OLSON
LEA MÁRQUEZ PETERSON

IN THE MATTER OF THE APPLICATION OF EPCOR WATER ARIZONA INC. FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND INCREASES/DECREASES IN ITS RATES AND CHARGES BASED THEREON FOR UTILITY SERVICE BY ITS AGUA FRIA, ANTHEM, CHAPARRAL, HAVASU, MOHAVE, NORTH MOHAVE, PARADISE VALLEY, SUN CITY, SUN CITY WEST, TUBAC, AND WILLOW VALLEY WATER DISTRICTS AND FOR CONSIDERATION OF CONSOLIDATION PROPOSALS	DOCKET NO: WS-01303A-20-____

DIRECT TESTIMONY
OF
ANDREW D. BROWN
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

DIRECT TESTIMONY
OF
ANDREW D. BROWN
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

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EXECUTIVE SUMMARY

Andrew D. Brown discusses and provides support for the capital investment projects undertaken by the Company in each district since the last rate case or acquisition of the district through to the end of the test year. He also testifies in support of the Company's proposed revisions to its Service Line and Meter Installation Tariff and changes to its Hook-up Fee tariff.

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND TELEPHONE NUMBER.

A. My name is Andrew D. Brown. My business address is 2355 W. Pinnacle Peak Road, Suite 300, Phoenix, AZ 85027. My business phone is 623-445-2497.

Q. IN WHAT CAPACITY AND BY WHOM ARE YOU EMPLOYED?

A. I am employed by EPCOR USA ("EUSA") as the Director of Engineering.

Q. PLEASE DESCRIBE YOUR PRIMARY RESPONSIBILITIES FOR THE COMPANY.

A. I am responsible for planning, engineering, and project delivery of EPCOR Water Arizona Inc.'s ("EWAZ" or "Company") capital program along with developer services and GIS functional areas. I am responsible for identifying and prioritizing projects into the capital budgeting process as well as providing oversight of the design and construction process to ensure compliance of those projects with assigned budget and schedule.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE AND EDUCATION.

A. I have 33 years of experience as a civil engineer. I have spent the last 27 years engaged in the field of water and wastewater engineering in Arizona. The bulk of that experience includes oversight of design and construction of water and wastewater infrastructure projects.

Prior to joining EUSA, I was the Deputy Director of the Wastewater Engineering Division for the City of Phoenix's Water Services Department. While at Phoenix Water Services, I also served as Deputy Director of the Construction Management

Division and was responsible for the construction phase of the majority of capital water and wastewater infrastructure projects. I am a registered professional engineer in the State of Arizona and a member of several engineering and water/wastewater-related professional organizations including the American Society of Civil Engineers ("ASCE"), AZ Water Association, and the American Public Works Association ("APWA").

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. I received my Bachelor of Science degree in Civil Engineering from Northern Arizona University in 1983.

Q. ARE YOU A REGISTERED PROFESSIONAL ENGINEER?

A. I am a Professional Engineer (Civil), registered in the state of Arizona.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes. I have previously submitted pre-filed direct testimony in EWAZ's last wastewater rate case (Docket No. WS-01303A-16-0145) and testified in EWAZ's last water rate case for its 11 districts (Docket No. WS-01303A-17-0257).

II. PURPOSE OF TESTIMONY

Q. PLEASE DESCRIBE THE PURPOSE OF YOUR TESTIMONY.

A. The purpose of my testimony is to discuss and provide support for capital investment projects undertaken by EWAZ in each district since the last rate case or acquisition of the district. I also testify in support of the Company's proposed revisions to its Service Line and Meter Installation Tariff and changes to its Hook-up Fee Tariff.

III. CAPITAL EXPENDITURES SINCE LAST RATE CASE BY DISTRICT.

Q. HAS EWAZ MADE SIGNIFICANT CAPITAL INVESTMENTS SINCE THE LAST TEST YEAR OR, FOR NEW DISTRICTS, SINCE THE ACQUISITION OF THE DISTRICT?

A. Yes. Table 1 below shows when the last test year ended for each district, as well as the Arizona Corporation Commission ("Commission") decision for each district's last rate case, which are all prior to EWAZ's acquisition of what was then Arizona American Water Company.

Table 1 – Last Test Year and Rate Decision Per District[1]

Water District	Last Test Year	Decision
Agua Fria	06/30/10	73145
Anthem	12/31/08	72047
Chaparral	12/31/12	74568
Havasu	06/30/10	73145
Mohave	06/30/13	75268
North Mohave	12/31/95	60168
Paradise Valley	06/30/13	75268
Sun City	06/30/13	75268
Sun City West	12/31/07	71410
Tubac	06/30/13	75268
Willow Valley	12/31/11	74364

Q. PLEASE PROVIDE DETAILS REGARDING MAJOR CAPITAL INVESTMENTS FOR EACH DISTRICT SINCE ITS LAST TEST YEAR.

[1] The 2017 rate case filed for all 11 Arizona water districts in Docket No. WS-01303A-17-0257 used a 2016 test year, but did not result in a Commission decision. An interim rate surcharge was approved for all 11 water districts in Decision No. 77147 (April 16, 2019) in a separate docket – specifically, Docket No. WS-01303A-19-0011.

A. The following Table 2 outlines the investments that EWAZ has made in capital projects for each district since its last test year or, in the case of newly-acquired districts, since the date of the acquisition.

Table 2: Investment Since Last Rate Case by District (In Millions)

District	2008	2009	2010	2011	2012 ***	2013	2014	2015	2016	2017	2018	2019	Total
Agua Fria ****			904	3,674	2,737	1,808	16,832	13,708	6,610	23,996	17,462	41,072	128,802
Anthem		2,704	530	839	1,329	775	349	1,124	1,826	2,174	3,149	5,490	20,289
Chaparral						4,356	2,736	4,173	4,510	2,547	6,281	5,757	30,361
Havasu****				226	329	1,036	167	256	416	4,245	360	1,336	8,372
Mohave ****						1,260	6,197	5,020	2,187	6,674	2,616	4,454	28,407
North Mohave **	4,474	1	12	36	860	1,667	208	841	358	959	513	661	10,590
Paradise Valley ***						745	2,681	3,241	2,478	2,518	2,752	3,707	18,123
Sun City ****						969	5,004	7,634	11,088	8,755	5,604	9,418	48,473
Sun City West	1,131	649	2,603	827	1,021	1,201	610	1,672	3,296	1,551	1,215	4,638	20,415
Tubac ****						46	28	246	44	164	194	172	894
Willow Valley *					147	72	6	38	152	413	147	404	1,379
EPCOR Arizona Total	$5,605	$3,354	$4,049	$5,602	$6,422	$13,936	$34,819	$37,952	$32,965	$53,996	$40,293	$77,111	$316,105

* EPCOR Purchased System in 2016

** EPCOR Purchased System in 2014, 2008 Expenditures represent 1995-2008 period

*** Systems owned by Utility other than EPCOR prior to 2012

**** Last Rate Case was a June (Mid Year) Test Year, first year additions reflect 6 months of expenditures

EWAZ's cumulative capital investments during this period totaled nearly $316.1 million. This total includes the following large projects:

- Agua Fria White Tanks Water Treatment Plant Expansion
- Agua Fria Water Plant 12
- Agua Fria Cactus Road Water Main
- Northeast Agua Fria Well 100.3 (Corte Bella #2)
- Anthem Membrane Replacements at Plants 1, 2 & 4
- Anthem Permeate Piping Project
- Anthem Remote Facility Improvements – Upper Reservoir
- Chaparral Sunridge Drive Water Main Replacement

- Chaparral Reservoir 2 Improvements
- Chaparral Well 11
- Mohave (Bullhead City) Well 16-4
- Mohave (Laredo Vista) Well 2
- Mohave (Silver Creek) Tank 2
- Paradise Valley (Mockingbird) Water Main Project
- Paradise Valley (Orange Blossom) Water Main Replacement
- Paradise Valley (Chaparral Road) Water Main Realignment
- Sun City Well 1.1 Replacement
- Sun City Well 6.3 Replacement
- Sun City Well 8.3B Replacement
- Sun City West Well 1.3 Replacement
- Sun City West Well 1.5 Replacement

A. AGUA FRIA WHITE TANKS WATER TREATMENT PLANT EXPANSION

Q. PLEASE DESCRIBE THE EXPANSION OF THE WHITE TANKS REGIONAL WATER TREATMENT PLANT.

A. At the time of the expansion of the White Tanks Regional Water Treatment Plant ("White Tanks"), maximum day demands in the Agua Fria Water District required production of approximately 18-19 MGD. Prior to its expansion, White Tanks had a total capacity of 20 MGD; however, net capacity, after accounting for backwash water and other internal processes, was approximately 17-18 MGD. EWAZ supplemented treated surface water with well production in order to keep up with 2016 and 2017 water demands. In order to maximize the use of available surface water, an expansion of production capacity was needed at White Tanks. Design of

the plant expansion commenced in September 2016. At the time, the major treatment process units at White Tanks consisted of raw water impoundment, chemical conditioning, flocculation/coagulation basins, dissolved air flotation ("DAF"), gravity media filtration, ultra-violet ("UV") and chlorine disinfection. Previous design efforts identified the need for expanded capacity and improved process performance during water quality excursions.

White Tanks primarily treats Central Arizona Project ("CAP") surface water delivered through the lower Beardsley Canal with seasonal releases from the lower lake. Water quality from the lower lake is characterized by relatively high total organic carbon ("TOC") and turbidity levels. Source water delivery to White Tanks is also susceptible to water quality excursions from Bill Williams River run events, CAP Canal failures and storm water runoff. Design improvements to the plant increased both treatment capacity and performance by expanding the existing DAF/filter facility and through the addition of a ballasted flocculation system.

This expansion resulted in a third raw water storage basin, one additional DAF train, two additional gravity media filters, and the replacement of two 20-MGD UV reactors with two 33-MGD UV reactors. EWAZ also upgraded several plant components to support the increased plant size, including the raw water pump station, finished water pump station, chemical feed systems, wastewater clarifier modifications, return flow pump station, drying beds and miscellaneous site improvements. Furthermore, EWAZ constructed a 33 MGD ballasted flocculation system and building facilities to support the new process train and improve plant treatability-during water quality excursions.

Q. WHAT BENEFITS DOES THIS EXPANSION PROVIDE TO CUSTOMERS?

A. Completing this project assures EWAZ's ability to provide quality water to customers throughout the year particularly during high demand periods in the summer (when maximum-day demands exceeded plant capacity) along with the ability to treat surface water during water quality excursion events. In the past, these excursion events would have required the plant to be shutdown intermittently during high demand periods. During those periods, system water supply was completely reliant on groundwater sources only, which alone cannot meet the peak summer demands.

It should also be noted that this project has been nominated for a few industry awards and was recently recognized by industry for the AZ Water Association – Water Project of the Year in 2020.

B. AGUA FRIA WATER PLANT 12

Q. PLEASE DESCRIBE THE AGUA FRIA WATER PLANT 12 PROJECT.

A. This project included the design and construction of a new water distribution plant to meet existing customer demands in the Agua Fria Water District and alleviate demand on Agua Fria Water Plant 5 that was over-utilized. Agua Fria Water Plant 12 provides the additional capacity to meet existing customer demands while providing better service and redundancy. The new plant allows pressure at the existing Agua Fria Water Plant 5 to be lowered, reducing failure potential.

The scope included construction of a 1.5 MG storage tank, booster pump station to serve Agua Fria Zone 2, surge mitigation, SCADA, controls, sampling points, chlorination, and one mile of 16-inch and 20-inch water main from the trunkline to storage and from storage into distribution.

C. AGUA FRIA CACTUS ROAD WATER MAIN

Q. PLEASE DESCRIBE THE CACTUS ROAD WATER MAIN PROJECT.

A. This project installed a one-mile segment of 30-inch water transmission main in Cactus Road, between Citrus Road and Cotton Lane. The Agua Fria transmission main network is the backbone of the Agua Fria Water District. It links the northern areas served by Agua Fria Water Plant 4 to the southern area of Verrado served by Agua Fria Water Plant 9. This segment of the Agua Fria transmission main network is part of the overall master plan for the area to provide water to Agua Fria Water Plant 14. Agua Fria Water Plant 14 was only supplied by two groundwater wells and was not connected to the transmission line system. Should either of those wells fail, Water Plant 14 can still keep up with demand with help from Water Plants 1, 2, & 3.

D. NORTHEAST AGUA FRIA WELL 100.3 (CORTE BELLA #2)

Q. PLEASE DESCRIBE THE AGUA FRIA WELL 100.3 PROJECT.

A. Northeast Agua Fria ("NEAF") is a sub-area of the Agua Fria service area. NEAF is supplied from Water Plant 100 and is not hydraulically connected to the rest of the Agua Fria service area. Water Plant 100 was supplied from two wells, Well 100.1 and 100.2. The capacity of 100.1 is approximately 1,000 gpm, and 100.2 is approximately 1,650 gpm. The deficit of firm capacity for meeting summer demands in this area was approximately 350 gpm, which is the main reason why

this project was necessary. The additional Well 100.3 therefore meets the capacity needs for this area, as well as providing continuity of service should one of the original wells fail during the peak summer season.

E. ANTHEM MEMBRANE REPLACEMENT AT PLANTS 1, 2 & 4

Q. PLEASE DESCRIBE THE MEMBRANE REPLACEMENT AT ANTHEM WATER TREATMENT PLANT 1, 2 & 4 PROJECT.

A. The existing membranes at the water treatment plant reached their useful life and required replacement. In addition, the type C membranes originally furnished are no longer manufactured and were replaced with type D membranes that have a different format and air requirements requiring infrastructure modifications. These projects included the infrastructure modifications along with replacement of the membranes. EWAZ outfitted three of the basins with new membranes as part of this project.

F. ANTHEM PERMEATE PIPING PROJECT.

Q. PLEASE DESCRIBE ANTHEM PERMEATE PIPING PROJECT.

A. The Anthem Water Treatment Plant utilizes a membrane treatment process to clean and filter surface water to drinking water standards. The plant was constructed in 2000, and 304 stainless steel pipe was used for the permeate piping headers above each of the four membrane basins. The permeate pipes contain the clean water that has been pulled through the membrane fibers. The continual exposure to the water and chlorine vapors above the frequently aerated membrane basins had caused the 304 stainless permeate pipe to corrode to the point of needing replacement. Replacing the permeate pipe headers with 316 stainless steel will increase the life of the pipe because 316 stainless steel has greater

corrosion resistance and strength. There are six SCADA controlled and electrically operated valves associated with each set of four permeate pipe headers, which have also been in service for the same length of time. All of these valves were removed and re-installed during the replacement of the permeate piping, and their electric actuators are at the end of their useful life, so replacement of the SCADA controlled valves and actuators with this project saved significant labor costs than if the piping and valve replacement projects were accomplished separately.

The scope of this project includes the removal of the existing 304 stainless steel permeate pipe headers and all of the associated electrically controlled valves from the membrane room at the Anthem Water Treatment Plant, and the replacement with 316 stainless steel pipe headers, new valves, and new valve actuators, including all labor and necessary electrical and communication wiring.

G. ANTHEM REMOTE FACILITY IMPROVEMENT UPPER RESERVOIR

Q. PLEASE DESCRIBE THE ANTHEM REMOTE FACILITY IMPROVEMENT UPPER RESERVOIR PROJECT.

A. The Anthem Campus uses and treats surface water delivered through the CAP canal system. Water is disinfected with sodium hypochlorite at the main Anthem water campus and is pumped to the four main zones. Water for Zones 2, 3, and 4 is pumped from the plant into the Upper Reservoir where it is delivered by gravity to Zone 2 and via pumps to Zones 3 and 4. Because chlorine is added at the plant, Total Trihalomethanes ("THMs") begin forming immediately and increase at a rapid rate. This water stored in the Upper Reservoir is then pumped out to the

farthest points of the system. In the past, Total THMs have reached .07 mg/l (with the maximum contaminant level of .08 mg/l).

To combat this, a temporary Total THM mitigation air stripping system was installed in 2013. This reduction gave the Anthem team lower numbers in the farthest points of the system, but the system needed to be upgraded to give better results and a more effective reduction process. The Total THM removal system needed more sprayers along with a higher output water delivery system. Additional sprayers had to be added to the two reservoirs spray bars to improve Total THM removal effectiveness and efficiently. Preliminary calculations with additional sprayers show the possibility of more than a 50% reduction in Total THMs at the site, thus reducing Total THMs in the system by a similar amount.

The Upper Reservoir site also includes a chlorine disinfection system to maintain the residual in Zones 2, 3, and 4. For safety reasons, auto shut off valves were added to the gas chlorine cylinders feed system.

H. CHAPARRAL SUNRIDGE DRIVE WATER MAIN REPLACEMENT

Q. PLEASE DESCRIBE THE CHAPARRAL SUNRIDGE DRIVE WATER MAIN REPLACEMENT PROJECT AND WHY IT WAS NEEDED.

A. The Chaparral Zone 2 and Zone 3 water mains, located on Sunridge Drive, extend from Palisades Boulevard to Golden Eagle Boulevard and consists of two mains, approximately 9,423 ft. (1.78 miles) and 14,244 ft. (2.70 miles) of 12-inch diameter pipe, that feed pressure zones 2 & 3, respectively. Both water mains were constructed using C900 PVC and were installed in 1995-96. From 2007 to 2017, the Zone 3 water main experienced nine (9) water main breaks from

Palisades to Desert Canyon Drive, with over $700,000 being spent on repairs. EWAZ determined that the water main breaks were attributed to poor bedding and improper backfilling procedures. To address the issues, EWAZ replaced the C900 PVC pipe with ductile iron pipe, properly installed, bedded, backfilled and tested per specifications and industry standards.

I. CHAPARRAL RESERVOIR 2 IMPROVEMENTS

Q. PLEASE DESCRIBE RESERVOIR 2 BOOSTER STATION UPGRADE FOR THE CHAPARRAL DISTRICT.

A. This project provided additional pumping capacity necessary to fully utilize and distribute source water from both the Shea Water Treatment Plant and Well 11 within the Chaparral Water District distribution system. Before the project, the existing booster station at Reservoir 2 had a capacity of up to 2,600 gpm, with only 1,100 gpm available to Zone 2 under normal operating conditions. Well 11 and the Shea Water Treatment Plant provided a combined 3,850 gpm of flow to Reservoir 2, creating a chokepoint. To fully utilize both Well 11 and the Shea Water Treatment Plant, EWAZ upsized the existing booster pumps, along with associated electrical upgrades. In addition, with source water from both the Shea WTP and Well 11, the Reservoir 2 facility has become a critical site for the Chaparral water distribution system. Additionally, the introduction of Well 11 water provides the opportunity for the Reservoir 2 facility to deliver water directly and indirectly to all pressure zones in the Chaparral Water District, providing another level of redundancy that did not currently exist to ensure continuity of service. With both Well 11 and Shea WTP water sources now being able to provide full supply to the Reservoir 2 facility, it has become a hub of the Chaparral water distribution system.

Q. WHAT OTHER COMPONENTS WERE PART OF THIS PROJECT?

A. Increasing the pump station capacity also required an increase in the capacity of other mechanical equipment and electrical gear, adding to the scope of the project. In addition, and because the Reservoir 2 facility was originally constructed in the 1970s, the existing pump cans, suction and distribution piping needed replacement. Finally, given how critical this facility is to the distribution system, a new and larger booster station along with associated mechanical and electrical components around the existing operating facility was constructed.

J. CHAPARRAL WELL 11

Q. PLEASE DESCRIBE THE CHAPARRAL WELL 11 PROJECT.

A. Well 11 is located in Fountain Hills at the intersection of Kingstree Boulevard and Saguaro Boulevard. The addition of Well 11 increases the Chaparral Water District's reliable supply. Without this additional supply source, the Shea WTP could not be taken off-line to perform maintenance activities. This is especially important as the raw water storage tank is in need of cleaning and repair. With the addition of Well 11, the two wells together can now handle customer demands in lower demand months so that the plant could be taken off-line.

The scope of this project included upgrading the electrical equipment at the well site, equipping Well 11 with a new vertical turbine pump and motor, making modifications to the existing water mains in Kingstree Blvd. for transmission of the well water to Reservoir 2, and piping modifications at the Reservoir 2 site.

K. MOHAVE (BULLHEAD CITY) WELL 16-4

Q. PLEASE DESCRIBE THE MOHAVE WELL 16-4 PROJECT.

A. Well 16-2 had been the only source dedicated to the specific areas within this system of the Mohave Water District (specifically, the 800 and 880 Zones in the Mohave Water District). Not only were these zones lacking in reliable supply, Well 16-2 was in poor condition and at risk for failure. Well 16-2 had also served as a back-up source to the 1100 (Silver Creek) Zone, which is also supplied by a single source, Well 24-1.

This project now provides reliable supply for multiple zones within Mohave Water District Bullhead City system (specifically at Zones 800, 880, and 1100). The scope of this project included purchasing land within Zone 800 in the proximity of Well 16-2 and the 16-2 Tank site, and drilling and equipping Well 16-4.

L. MOHAVE (LAREDO VISTA) WELL 2

Q. PLEASE DESCRIBE THE LAREDO VISTA WELL 2 PROJECT.

A. The scope of the project included drilling and equipping the well and installation of a disinfection system, a 35,000-gallon water tank for chlorine contact time and equalization, booster pumps, and piping to connect into the distribution system. Laredo Vista Well 2 increases the reliability of the water supply in the 1290 and 1100 pressure zones. For background, the nomenclature for naming the pressure zones is related to the elevation in the zone (*e.g.*, 1290, represents an elevation of 1,290 feet above sea level). Without this well, there would have been no firm supply and a greater potential that service to customers could have been interrupted in the event that the largest supply source (Well 24-1) was out of service or experienced high water demand.

M. MOHAVE (SILVER CREEK) TANK 2

Q. PLEASE DESCRIBE THE SILVER CREEK TANK 2 PROJECT.

A. This project was required to ensure that adequate water supply and fire protection could be provided in the 1290 and 1100 pressure zones. Given its poor condition, the existing Silver Creek tank at the site needed repair, which required it be taken out of service. The new Silver Creek Tank provides storage during the rehabilitation of the older tank. The new tank will also provide operational redundancy and allow for improved maintenance. Finally, providing additional storage directly in this gradient (versus only Zone 1290) reduces the reliance on Zone 1290 to supply large volumes of water under emergency conditions (i.e., fire flows can now be provided more directly to Zone 1100).

A new 12-inch main is now inter-connected with the existing tank discharge piping and is re-directed to the new storage tank. A new 8-inch main connects to the existing tank inlet (from Zone 1290) piping and is directed to the new tank. Per the City of Bullhead City requirements, a masonry block fence was required around the perimeter of the site as part of this project.

N. PARADISE VALLEY (MOCKINGBIRD) WATER MAIN PROJECT

Q. PLEASE DESCRIBE THE MOCKINGBIRD LANE MAIN PROJECT.

A. The new Ritz-Carlton development is north of Lincoln Drive between Mockingbird Lane and Scottsdale Road. In 2017, the Ritz Carlton upsized its water supply with a 30-inch feed line that ties in at the Lincoln and Quail Run intersection and loops back with new 12-inch mains at Scottsdale Road and Mockingbird Lane. As part of that work, EWAZ replaced the existing 6-inch asbestos cement pipe ("ACP") in Mockingbird Lane between Ocotillo and Cactus Wren with new 12-inch ductile iron pipe. The current project replaced the

remaining 6-inch ACP water main between Ocotillo and Lincoln, approximately 1,300 feet that was originally installed in 1963, with new 12-inch ductile iron pipe.

Replacement of this nearly 60-year old infrastructure completed the upgrade of this existing water line mitigating the risk of future line breaks and providing a more reliable water system in the area. In addition, the Town of Paradise Valley was in the midst of a pavement replacement program making it beneficial to complete any below grade work prior to new pavement, where moratoriums are put in place not allowing street cuts for a certain number of years. Also the risk of main breaks following new pavement replacement would make the repair all the more expensive, plus be disruptive to traffic.

O. PARADISE VALLEY (ORANGE BLOSSOM) WATER MAIN REPLACEMENT

Q. PLEASE DESCRIBE THE ORANGE BLOSSOM WATER MAIN REPLACEMENT PROJECT.

A. Due to age and condition of existing infrastructure, including a history of main breaks and service leaks, the need for a water main replacement project was identified and implemented in this area. The scope of this project included the replacement of 3,200 linear feet of 6-inch ductile iron pipe; 12 new 6-inch valves; five new fire hydrants; 64 new 1-inch copper services between the main and the meter; and replacement of 48 meter boxes. Pre-existing customer water meters were reused.

P. PARADISE VALLEY (CHAPARRAL ROAD) WATER MAIN REALIGNMENT

Q. PLEASE DESCRIBE THE CHAPARRAL ROAD WATER MAIN REALIGNMENT PROJECT.

A. The need for this project was dictated by a major street improvement and storm drain project in Chaparral Road by the City of Scottsdale. The Company's existing waterlines had to be relocated in numerous locations to accommodate the City's project. The scope of this project included 161 linear feet of new 12-inch ductile iron pipe (four vertical realignments); 326 linear feet of new 6-inch ductile iron pipe (five vertical realignments); three new 6-inch valves; one new 12-inch valve; one new 8-inch valve, three new fire hydrants; 11 new 1-inch copper water services; and one new 2-inch landscape irrigation service.

Q. SUN CITY WELL 1.1 REPLACEMENT

Q. PLEASE DESCRIBE THE SUN CITY WELL 1.1 REPLACEMENT PROJECT.

A. The Sun City Water service area receives all potable water from groundwater sources. The service area is divided into two pressure zones (High Zone and Low Zone). The Low Zone is supplied from Water Plants 1, 2, 3 and 4. Water Plant 1 is needed to maintain adequate pressure (greater than 40 psi) for customers. Water Plant 1 receives its water supply from a combination of two wells: 1.1 and 1.2. Well 1.1 was originally drilled in 1951, and the condition of Well 1.1 had deteriorated to the extent that it was considered to be at risk of imminent failure. The well is 62 years old and had exceeded its design life. Due to the extremely poor condition of this well, and the history of repairs and temporary fixes, the well

was replaced under this project. If Sun City Well 1.1 was not replaced, the existing surplus would effectively be eliminated leaving no redundancy to meet demand. Given the age of existing sources of supply and the need to replace additional wells in future years, the need to replace Sun City Well 1.1 was justified.

R. SUN CITY WELL 6.3 REPLACEMENT

Q. PLEASE DESCRIBE THE SUN CITY WELL 6.3 REPLACEMENT PROJECT.

A. The Sun City Water District service area receives all potable water from groundwater sources. The service area is divided into two pressure zones (High Zone and Low Zone). The High Zone is supplied from Water Plant 5, 6, and 8. Water Plant 6 is needed to maintain adequate pressure for customers in the southeast part of the High Zone and to provide emergency supply in the Low Zone. Water Plant 6 receives its water supply from a combination of four wells: 6.1, 6.2, 6.3, and 6.4. If Well 6.3 were to fail, the remaining three wells would not be capable of meeting customer demands at all times. Sun City Well 6.3 was originally drilled to a depth of 1,006 feet in 1956. The condition of Sun City Well 6.3 had deteriorated to the extent that it was considered to be at risk of imminent failure. Due to the extremely poor condition of this well, as well as the history of repairs and temporary fixes to this well, replacement of this well was necessary.

Similar to the replacement of Sun City Well 1.1, if Sun City Well 6.3 had not been replaced, the existing surplus would effectively be eliminated leaving no redundancy to meet demand. In addition, blending is in place at Sun City Water Plant 6 to mitigate nitrate and arsenic levels from two of the four wells that pump

water into Water Plant 6. Given the age of existing sources of supply and the need to replace additional wells in future years, the need to replace Sun City Well 6.3 was justified**.** The scope of this project included drilling and equipping a replacement well. The replacement well was drilled to the same approximate depth as the existing well (1,006 feet), and produces more than 1,350 gpm.

S. SUN CITY WELL 8.3B REPLACEMENT

Q. PLEASE DESCRIBE THE SUN CITY WELL 8.3B REPLACEMENT PROJECT.

A. Water Plant 8 in the Sun City Water District is needed to maintain adequate pressure (greater than 40 psi) for customers in the northern-most portion of the district. Water Plant 8 receives its water supply from a total of three wells: 8.1, 8.2, and 8.3. Water quality and productivity of these wells is such that in order to maintain reliable supply from Water Plant 8, all wells must be operational. Well 8.2 exceeds the Nitrate maximum contaminant level and must be blended with water from Wells 8.1 and 8.3. The condition of Well 8.3 deteriorated to the extent that it is considered to be at risk of imminent failure. Due to the extremely poor condition of this well, as well as the history of repairs and temporary fixes to this well, replacement was required. Due to blending requirements at Water Plant 8, if Well 8.3 had failed, that would have limited the ability to blend water from Well 8.2 and, with water only available from Well 8.1, there would have been inadequate supply to meet demands in this part of the district. The scope of this project included drilling and equipping a replacement well for Sun City Well 8.3. The replacement well was drilled to a depth of approximately 1,300 feet, and produces approximately 1,000 gpm.

T. SUN CITY WEST WELL 1.5 REPLACEMENT

Q. PLEASE DESCRIBE THE SUN CITY WEST WELL 1.5 REPLACEMENT PROJECT.

A. Sun City West Well 1.5 occupies a 131-foot by 61.5-foot site that is located within a residential neighborhood. The well was originally drilled in 1956 and discharges to Sun City West Water Plant l. The equipment layout was reconfigured in 1985. The capacity of this well continued to decrease over time and continued to produce a large quantity of sand requiring the use of a de-sander at this site. Sun City West Well 1.5 is one of five wells that deliver water to Sun City West Water Plant 1.

The project required abandonment/sealing of the existing well, demolition of the existing facilities and re-equipping of the well site with updated electrical equipment and pumping system.

U. SUN CITY WEST WELL 1.3 REPLACEMENT

Q. PLEASE DESCRIBE THE SUN CITY WEST WELL 1.3 REPLACEMENT PROJECT.

A. Sun City West Well 1.3 was originally drilled in 1939 as an agricultural well and converted to a potable water well in 1986. The well collapsed sometime prior to October 7, 2014, which was confirmed by video camera inspection at a depth of 455 feet. The well capacity prior to collapse was just under 1,000 gpm. The replacement Sun City West Well 1.3 was required to provide sufficient firm capacity in the system to meet current and projected maximum day demands.

The scope of this project included drilling and equipping a replacement well for Sun City West Well 1.3. The replacement well was drilled to a depth of 1,200 feet and produces more than 1,300 gpm.

IV. FUTURE CAPITAL EXPENDITURES

Q. PLEASE DESCRIBE EWAZ'S PLANS FOR FUTURE CAPITAL EXPENDITURES.

A. Table 3 below outlines the estimated capital expenditures for the next ten years.

Table 3. 10-Year Projected Capital Expenditures

Water District	Capital Investment 2020-2024	Capital Investment 2025-2029	Total Capital Investment 2020-2029
Agua Fria Water	$ 89,731,901	$ 53,189,569	$ 142,921,471
Anthem Water	$ 7,541,714	$ 3,705,415	$ 11,247,129
Chaparral Water	$ 19,219,818	$ 19,881,335	$ 39,101,153
Havasu Water	$ 9,491,871	$ 4,517,876	$ 14,009,747
Mohave Water	$ 32,716,197	$ 22,436,254	$ 55,152,451
North Mohave Water	$ 7,195,874	$ 6,181,759	$ 13,377,633
Paradise Valley Water	$ 23,414,370	$ 22,627,625	$ 46,041,995
Sun City Water	$ 30,650,568	$ 22,901,465	$ 53,552,033
Sun City West Water	$ 16,536,249	$ 16,849,016	$ 33,385,265
Tubac Water	$ 6,363,985	$ 8,084,885	$ 14,448,870
Willow Valley Water	$ 7,821,711	$ 3,325,539	$ 11,147,250
Total Arizona Water	**$ 250,684,258**	**$ 183,700,738**	**$ 434,384,996**

EWAZ's capital expenditures over the next ten years are estimated to average approximately $40 million per year. The 2020-2024 numbers in Table 3 include the post-test-year investments referenced in the testimony of Company witness Mr. Jeffrey Stuck. Of course, these figures are only estimates, where the actual

costs of investments will not be known until the time when such expenditures are made and projects completed, and are used and useful.

Q. HOW DOES EWAZ ASSESS THE NEED FOR CAPITAL INVESTMENTS TO ITS WATER SYSTEMS?

A. EWAZ employs a proactive infrastructure assessment program for its water districts, so that its infrastructure is rehabilitated or replaced prior to failure. Waiting for failure is not in the best interest of customers because it can cause service disruption and ultimately result in remedial work that is both longer and more expensive. Replacement has and will continue to be necessary, given the age of much of the water system infrastructure; but in the interests of controlling costs, the Company will opt to rehabilitate infrastructure instead of replacement if it is feasible to do so. EWAZ performs condition assessments to evaluate remaining life of infrastructure. These assessments include a review of infrastructure age, material, leak or break history, environment (*e.g.,* soil conditions, exposure to elements, chemicals).

V. <u>SERVICE LINE AND METER INSTALLATION CHARGES.</u>

Q. IS THE COMPANY PROPOSING A NEW SERVICE LINE AND METER INSTALLATION TARIFF?

A. Yes, the Company is proposing the following service line and meter installation charges for all 11 water districts. The Company seeks to have uniform charges for all new service lines and meter installations since the costs of doing so are uniform throughout Arizona. The table below shows the current rates as well as the proposed rates:

Table 4: Service Line and Meter Installation Charges

Service Line Installation Charges (Refundable)	Present Rates	Proposed Rates
5/8" Meter	Various	$ 4,000.00
3/4" Meter	Various	$ 4,000.00
1" Meter	Various	$ 4,000.00
1-1/2" Meter	Various	$ 4,000.00
2" Turbine Meter	Various	$ 4,000.00
2" Compound Meter	Various	$ 4,000.00
3" Turbine Meter	Various	$ 4,000.00
3" Compound Meter	Various	$ 4,000.00
4" Turbine Meter	Various	$ 4,000.00
4" Compound Meter	Various	$ 4,000.00
6" Turbine Meter	Various	$ 4,000.00
6" Compound Meter	Various	$ 4,000.00
Over 6" Meter	Various	At Cost
Meter Installation Charges (Refundable)	**Present Rates**	**Proposed Rates**
5/8"- Meter	Various	$ 165.00
3/4" Meter	Various	$ 185.00
1" Meter	Various	$ 220.00
1-1/2" Meter	Various	$ 325.00
2" Turbine Meter	Various	$ 385.00
2" Compound Meter	Various	$ 1,050.00
3" Turbine Meter	Various	$ 1,065.00
3" Compound Meter	Various	$ 1,665.00
4" Turbine Meter	Various	$ 1,335.00
4" Compound Meter	Various	$ 2,445.00
6" Turbine Meter	Various	$ 2,665.00
6" Compound Meter	Various	$ 3,700.00

Q. DID THE COMPANY MAKE THE SAME PROPOSAL IN THE 2017 WATER RATE CASE?

A. Yes.

Q. HOW WAS THAT PROPOSAL RECEIVED?

A. While Staff supported the Company's proposal regarding meter charges, Staff believed that the Company's proposed $4,000 service line installation charge was excessive and recommended charges as follows:

Service Line Installation Charges (Refundable)	Present Rates	Staff Proposed Rates *
5/8" Meter	Various	$ 565.00
3/4" Meter	Various	$ 565.00
1" Meter	Various	$ 629.00
1-1/2" Meter	Various	At Cost
2" Turbine Meter	Various	At Cost
2" Compound Meter	Various	At Cost
3" Turbine Meter	Various	At Cost
3" Compound Meter	Various	At Cost
4" Turbine Meter	Various	At Cost
4" Compound Meter	Various	At Cost
6" Turbine Meter	Various	At Cost
6" Compound Meter	Various	At Cost
Over 6" Meter	Various	At Cost
*Amount will be adjusted to include the actual cost incurred when boring under a road or highway is required.		

Q. WHY DOES THE COMPANY STILL BELIEVE THAT A $4,000 SERVICE INSTALLATION CHARGE IS APPROPRIATE FOR ALL METER SIZES UP THROUGH SIX INCHES?

A. The principal factor included in the development of the $4,000 charge is the location of the water main in relation to the service (whether the water main is on the near or far side of the road). Based on our experience, we find that one-half of the installations will actually cost slightly more than $4,000 and one-half will cost slightly less than $4,000. So $4,000 seemed like a good value at which to set the charge. Otherwise, there would be a significant difference in payment between

customers on the near side versus the far side of the road. This charge also best balances new customers not being subsidized by existing customers for new facilities to serve new customers (i.e., growth paying for growth).

Q. WOULD IMPLEMENTING "AT COST" FOR SERVICE LINE INSTALLATION CHARGES BE PROBLEMATIC?

A. Yes. This is because when customers seek to install a service line, they want to know up front what their costs will be if the charge is going to be "At Cost." At that time (before the installation), we cannot provide them with that certainty. We only know the actual costs after we complete the installation. The customers obviously do not like being in this state of uncertainty. As a result, we believe it is better to give customers a definitive cost up front for their installation. The other issue is that if customers determine not to move forward with installations because they believe actual cost to be cost prohibitive, we may be faced with difficulty finding contractors willing to respond to bids to perform the installation work. In short, customers want the certainty of knowing what the up-front cost will be to install their service line.

Q. IF STAFF'S RECOMMENDED SERVICE LINE INSTALLATION CHARGES WERE TO BE ADOPTED BY THE COMMISSION INSTEAD OF THE COMPANY'S PROPOSAL ACROSS ALL OF EWAZ'S WATER DISTRICTS, WOULD YOU RECOMMEND ANY CHANGES TO THE LANGUAGE REGARDING BORING?

A. Yes. Staff had a note regarding its recommended service line installation charges from its direct case that originally stated: *"Amount will be adjusted to include the actual cost incurred when **boring** under a road or highway is required"* [emphasis added]. The Company proposed in rebuttal from the 2017 case to amend the

language slightly to read: *"Amount will be adjusted to include the actual cost incurred **when boring under or cutting** across a road or highway is required."* This amended language is necessary because the Company does not bore under all roads or highways; oftentimes, EWAZ will cut, remove and replace asphalt. Therefore, the note should reflect any and all activities that the Company may do when it needs to address a road or highway. Including this note would make for a significant improvement over what is currently in place.

Q. DID STAFF SUPPORT THE AMENDED LANGUAGE IN SURREBUTTAL FROM THE 2017 CASE?

A. Yes.

VI. HOOK-UP FEE TARIFF

Q. WHAT IS EWAZ'S PROPOSAL FOR A HOOK-UP FEE?

A. EWAZ is proposing one hook-up fee ("HUF") for all eleven of its water districts.

Q. WHAT AMOUNT OF HOOK-UP FEE IS EWAZ PROPOSING?

A. The Company is proposing a consistent Common Facilities Hook-up Fee Tariff for its eleven water districts. Currently, only some of EWAZ's water districts currently have a HUF. The Company proposes a Common Facilities Hook-up Fee Tariff with the amounts based on the meter size. The table below details the proposed amounts per meter size. The Company would treat the HUFs as contributions in aid of construction:

COMMON FACILITIES HOOK-UP FEE TABLE
Meter Size Factor Total Fee

5/8" x 3/4"	$1,680.00
3/4"	$2,520.00
1"	$4,200.00

1-1/2"	$8,400.00
2"	$13,440.00
3"	$26,880.00
4"	$42,000.00
6" or larger	$84,000.00

Q. PLEASE EXPLAIN THE BASIS FOR THE AMOUNT OF THE HOOK-UP FEES THAT THE COMPANY IS PROPOSING.

A. The Company's proposal is for a Hook-up Fee that varies based on meter size and is based on both (1) estimate of annual capital expenditures and (2) the historical average of meter sizes purchased by the Company. More specifically, the specific HUF proposals were derived estimating total capital expenditures on an annual basis, as well as the total cost of infrastructure paid for by developers on an annual basis through advances (AIAC). The Company then determined the value of the HUFs (CIAC) given the historical average of meter sizes purchased by the Company, such that developers' total advances and contributions will maintain a proper balance of how rate base is funded (debt / equity / developer AIAC and CIAC).

Q. ARE THE CURRENTLY-APPROVED HOOK-UP FEE TARIFFS BEING UTILIZED?

A. Yes, however, the current Hook-up Fee tariffs vary from district to district and many districts do not currently have a Hook-up Fee. Many of the Hook-up Fees, currently in effect for those districts that have one, were approved based on very specific circumstances that existed at the time they were approved. Exhibit ADB-1 summarizes the current Hook-up Fees authorized by the Commission for each of the water districts. The Company is proposing to have a Hook-up Fee that would apply in all of its water districts.

Q. SHOULD THE TARIFF LANGUAGE REGARDING HOOK-UP FEES BE AMENDED IN ANY WAY?

A. Yes. In the section regarding "Common Facilities Constructed by Developer" it typically states that if the cost of common facilities contributed by Developer is more than the amount of Hook-up Fees under this tariff, then Developer shall be refunded the difference upon acceptance of the common facilities. Usually, the refund can be substantial and have significant potential rate impacts for a smaller district such as Tubac. Thus, the Company would propose modification of the language across all districts to allow for a refund to be paid in installments over a period of time to avoid this unintended consequence. The Company proposes that, given that the circumstances can be particular to a certain situation, it be allowed to negotiate the timing of the refund with a developer on a case by case basis.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

EXHIBIT ADB-1

PRESENT

	Agua Fria Water				Anthem Water	Chaparral Water	Havasu Water	Mohave Water
Meter Size	Component A Offset Eligible	Component B Not Offset Eligible	Total Fee	Central AZ Project Hook Up Fees[1] Residential: Age Restricted- $150; Other Dwelling- $275; Commercial	Rate Base Reduction	HUF	Arsenic Impact HUF	Foothills System
5/8" x 3/4"	$ 1,150	$ 2,130	$ 3,280	$ 150	Tariff removed in Decision No 72047	Fee shall be variable, fixed on January 1 of each calendar year, computed by dividing $369,404.50 by the # of hook-ups during the previous calendar year. However, in no event shall the hook-up fee be higher than $1,000 nor less than $500.	$ 870	$ 350
3/4"	$ 1,725	$ 3,195	$ 4,920	$ 225			$ 1,305	
1"	$ 2,875	$ 5,325	$ 8,200	$ 375			$ 2,175	
1.5"	$ 5,750	$ 10,650	$ 16,400	$ 750			$ 4,350	
2"	$ 9,200	$ 17,040	$ 26,240	$ 1,200			$ 6,960	
3"	$ 18,400	$ 34,080	$ 52,480	$ 2,400			$ 13,920	
4"	$ 28,750	$ 53,250	$ 82,000	$ 3,750			$ 21,750	
6" (or Larger)	$ 57,500	$ 106,500	$ 164,000	$ 7,500			$ 43,500	
8" (or Larger)	$ 57,500	$ 106,500	$ 164,000	$ 15,000			$ 69,600	

[1] These fees are only applicable for LXAs dated prior to December 31, 2007.

PRESENT

Meter Size	N. Mohave Water	Paradise Valley Water	Sun City Water	Sun City West Water	Tubac Water	Willow Valley Water
5/8" x 3/4"	N/A	N/A	N/A	N/A	N/A	N/A
3/4"						
1"						
1.5"						
2"						
3"						
4"						
6" (or Larger)						
8" (or Larger)						

EPCOR Water Arizona Inc.
Docket No. WS-01303A-20-XXXX
Test Year Ended December 31, 2019

EPCOR Direct Testimony

Mr. Jeffrey W. Stuck

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

ROBERT "BOB" BURNS, Chairman
BOYD DUNN
SANDRA D. KENNEDY
JUSTIN OLSON
LEA MÁRQUEZ PETERSON

IN THE MATTER OF THE APPLICATION OF EPCOR WATER ARIZONA INC. FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND INCREASES/DECREASES IN ITS RATES AND CHARGES BASED THEREON FOR UTILITY SERVICE BY ITS AGUA FRIA, ANTHEM, CHAPARRAL, HAVASU, MOHAVE, NORTH MOHAVE, PARADISE VALLEY, SUN CITY, SUN CITY WEST, TUBAC, AND WILLOW VALLEY WATER DISTRICTS AND FOR CONSIDERATION OF CONSOLIDATION PROPOSALS	DOCKET NO: WS-01303A-20-____

DIRECT TESTIMONY
OF
JEFFREY W. STUCK
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

DIRECT TESTIMONY
OF
JEFFREY W. STUCK
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

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EXECUTIVE SUMMARY

Jeffrey W. Stuck describes the service areas, systems, and facilities for the eleven water districts in this case and discusses the types of projects included in the Company's post-test year plant request. Mr. Stuck also testifies to the basis for the Company's tank maintenance requests. Finally, Mr. Stuck describes non-revenue water statistics in certain districts, and the Company's efforts in relation to those districts.

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND TELEPHONE NUMBER.

A. My name is Jeffrey W. Stuck. My business address is 2355 W Pinnacle Peak Road, Phoenix, Arizona, and my business phone is 623-445-3125.

Q. IN WHAT CAPACITY AND BY WHOM ARE YOU EMPLOYED?

A. I am employed by EPCOR USA ("EUSA") as Vice President of Operations.

Q. PLEASE DESCRIBE YOUR PRIMARY RESPONSIBILITIES FOR THE COMPANY.

A. My primary responsibilities are for water treatment and distribution, wastewater collection and treatment, and ensuring safe and reliable water and wastewater service for EPCOR Water Arizona Inc. ("EWAZ" or "Company"), including all of the water districts in this case.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE AND EDUCATION.

A. I hold a Bachelor of Science Degree from Arizona State University. I have worked in the water industry for over 24 years. I began my career working at the Arizona Department of Water Resources where my duties included water rights investigations associated with the Little Colorado River Adjudication. In 1992, I began working for the Arizona Department of Environmental Quality ("ADEQ") in the Safe Drinking Water Program. Over the next 13 years, I held many positions in the ADEQ Safe Drinking Water Program with the last being the position of Safe Drinking Water Program Manager. In 2005, I joined EUSA (then Arizona American Water Company) as the Western Region Environmental Director. From 2007 to 2018, I was

employed as the Eastern Division Operations Director with responsibilities that included overseeing water and wastewater operations in the communities of Paradise Valley, Anthem, Bullhead City, Lake Havasu, Tubac, Fountain Hills, and in unincorporated areas in Mohave County. In 2018, I was promoted to my present position where I am responsible for all of EWAZ's water and wastewater operations in the State of Arizona.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes, I have testified in multiple proceedings.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS CASE?

A. The purpose of my testimony in this proceeding is to describe the service areas, systems and facilities for the eleven water districts in this case and to discuss the Company's post-test year plant request. I will also discuss the Company's tank maintenance requests and non-revenue water statistics in certain districts.

III. EWAZ WATER DISTRICTS AND TANK MAINTENANCE PROGRAMS

A ANTHEM WATER DISTRICT SYSTEM.

Q. PLEASE DESCRIBE THE ANTHEM WATER DISTRICT SYSTEM.

A. The Anthem Water District system serves approximately 9,014 customers during the test year. The Anthem Water District service area is in an unincorporated area north of the city of Phoenix. The overall service area covers approximately 5,187 acres (8.11 square miles). The Anthem Water District is part of an integrated water/wastewater system comprised of a CAP raw water pumping station, a nine-mile pipeline that brings CAP water to the Anthem community, two wells, a water treatment plant, booster stations and reservoirs, and a network of water distribution

facilities. The Anthem Water Campus ("Campus") is a combined water and wastewater treatment plant. The initial infrastructure at the Campus was constructed in 1999 and uses state-of-the-art membrane-treatment technology for water treatment. Specifically, the Anthem Water Treatment Plant uses membrane-filtration technology to treat raw surface water from the CAP for drinking and other potable uses by our Anthem customers.

Q. DOES THE ANTHEM WATER DISTRICT HAVE A TANK MAINTENANCE PROGRAM?

A. Yes. Decision No. 72047 (January 6, 2011) authorized the deferral of tank maintenance costs in the Anthem Water District for recovery in a future rate application. During the test year, tank maintenance was performed and the costs were deferred consistent with Decision No. 72047. This Application includes a request to continue this authorization for deferral treatment of future tank maintenance expenses for the Anthem Water District and seeks approval of the amortization of the costs deferred in the test year.

Q. IS THERE A REASON THAT THE COMPANY IS NOT REQUESTING TO NORMALIZE THE TANK MAINTENANCE EXPENDITURES AT THIS TIME?

A. Yes. In the Anthem Water District, tanks are just beginning to reach the point in their lifecycle where maintenance is required and when the next maintenance will be needed is not known at this time. The Company believes that if additional maintenance is required, with deferral authorization those costs can be requested in a subsequent rate case and a tank maintenance program—with normalized rate treatment—proposed at that time.

Q. WHAT SPECIFIC STEPS HAS THE COMPANY TAKEN TO ENSURE SAFE AND EFFICIENT SERVICE TO THE ANTHEM WATER DISTRICT CUSTOMERS?

A. EWAZ adopted a three-pronged strategy designed to mitigate the risk of water system outage and to promote the efficient use of water within the Anthem Water District:

1. Water is delivered to Anthem and treated via the Company's raw water pipeline and treatment plant.
2. The Anthem Water District system has been interconnected with the City of Phoenix's water system, making potable water available through two additional points on the CAP system and from two additional water treatment plants owned by the City of Phoenix (see Exhibit JWS-3, page 1 of 2).
3. EWAZ has permitted a recharge facility and drilled recovery wells to allow use of recharged water.

B AGUA FRIA WATER DISTRICT

Q. PLEASE DESCRIBE THE AGUA FRIA WATER DISTRICT.

A. The Agua Fria Water District service area is in Maricopa County and runs approximately 15 miles north-south along the Loop 303. The service area is bounded primarily by the Beardsley Canal on the west, Grand Avenue on the north, and an irregular alignment along the east including Reems Road, Loop 303 and Citrus Avenue moving from north to south. The Verrado Community is located in the southwest corner of the service area, and the district includes an area north of Bell Road referred to as "Northeast Agua Fria" consisting of existing and future subdivisions such as Corte Bella, Cross River, Coldwater Ranch and Rancho Cabrillo

arrayed along either side of the Loop 303 highway between Grand Avenue and Happy Valley Road. The Agua Fria Water District consists of a mixture of developed residential areas as well as undeveloped farmland slated for future residential, commercial and light industrial land uses. The Agua Fria Water District is experiencing the most rapid customer growth of any of the Company's water districts. The Agua Fria Water District is approximately 53,390 acres (83 square miles) in total area with approximately 49,000 customers in the test year. The water supply for the Agua Fria Water District is a combination of groundwater, a CAP allocation, and the Maricopa Water District's ("MWD") Agua Fria River water. The CAP water is delivered to the White Tanks Water Treatment Plant ("White Tanks WTP") from Lake Pleasant and the CAP Canal via the Beardsley Canal which is owned and operated by the MWD. The Company also has a long-term agreement with MWD to purchase a portion of Agua Fria River surface water that is stored in Lake Pleasant. The agreement is based on the gradual conversion of agricultural lands to residential land uses within MWD's service area that overlaps with EWAZ's Agua Fria Water District service area. This water is cost competitive with CAP water and helps ensure a long-term sustainable, renewable water supply in the West Valley.

Q. PLEASE DESCRIBE THE AGUA FRIA WATER DISTRICT'S PRODUCTION AND DISTRIBUTION SYSTEM.

A. Depending on location and time of year, Agua Fria Water District customers receive either groundwater or treated surface water. There are 39 wells throughout the service area ranging in depth from 610 feet to over 1600 feet below ground surface. The oldest well in the system was drilled in 1946. Well water is pumped and then directed via transmission mains to one of 14 water plants where it may be treated for

arsenic removal (depending on the individual well's water quality), chlorinated, stored in tanks and then pushed into the distribution system to satisfy daily demands. Arsenic treatment is accomplished with Granular Iron Media or Ion Exchange units at the water plants. In addition to well production, the White Tanks WTP treats surface water from Lake Pleasant and the CAP Canal via the Beardsley Canal. As discussed in Mr. Brown's Direct Testimony, EWAZ recently expanded the White Tanks WTP, from a firm capacity of 13.4 MGD to a firm capacity of 26.7 MGD. This water is then distributed into the Agua Fria system via the Agua Fria trunk line. The trunk line runs north and south from Bell Road at the northern end to Verrado at the southern end. There are currently 19 water storage tanks built between 1996 and 2017 with a total storage volume of almost 27,800,000 gallons of water. There are approximately 680 miles of water mains, almost 17,600 valves and 6,400 fire hydrants in the Agua Fria Water District. Currently, the White Tanks WTP is shut down from December through February when MWD takes the Beardsley Canal offline for scheduled maintenance. All Agua Fria Water District customers receive groundwater when the White Tanks WTP is shut down.

Q. PLEASE PROVIDE ADDITIONAL BACKGROUND REGARDING SYSTEM INTERCONNECTIONS FOR AGUA FRIA.

A. There are five metered points of interconnection between the Agua Fria Water District and other systems (see Exhibit JWS-2). One interconnect is a 12-inch distribution line beneath Grand Avenue at Meeker Boulevard that connects the Agua Fria Water District to the Sun City West Water District. There is also a 12-inch distribution line along the Williams Drive alignment at the boundary of Sun City West and Corte Bella connecting the Agua Fria Water District and the Sun City West Water District. There are two 12-inch connections between the Agua Fria Water

District and the City of Surprise, one beneath Bell Road at Reems Road and one beneath Greenway at Litchfield Road. There is also a 3-inch connection between the Agua Fria Water District and the Arizona Water Company system near the intersection of Indian School Road and Jackrabbit Road. Interconnects provide system flexibility and production redundancy in the event of an unanticipated well or water plant failure. Water can be measured while being moved in either direction to supplement available production capacity in the event of an emergency. On more than one occasion, the Company has provided supplemental water to Arizona Water Company at Beautiful Arizona Estates when they experienced temporary equipment problems.

Q. DOES THE AGUA FRIA WATER DISTRICT HAVE AN APPROVED TANK MAINTENANCE PROGRAM?

A. Yes. Commission Decision No. 73145, issued May 1, 2012, approved a 15-year tank maintenance program including total estimated maintenance costs of $5,647,168, or $376,478 per year as displayed in Exhibit JWS-1 page 2 of 9. The Company's Application includes continuation of this plan as previously approved; the Company is not proposing to adjust the program at this time.

Q. DOES THE COMPANY HAVE A PLAN OF ADMINISTRATION ("POA") FOR THE AGUA FRIA TANK MAINTENANCE PROGRAM?

A. No, but the Company is proposing a POA consistent with the one in place for its Paradise Valley Water District. Mr. Jon P. Boizelle discusses the proposed POA for Agua Fria in his Direct Testimony.

Q. DOES THE PROPOSED POA INCLUDE A PROVISION FOR A FINAL RECONCILIATION AND TRUE-UP OF THE PROGRAM COSTS TO COSTS EXPENDED FOR TANK MAINTENANCE?

A. Yes, it does. The final reconciliation would occur at the end of the 15-year program period.

C CHAPARRAL WATER DISTRICT SYSTEM

Q. PLEASE DESCRIBE THE CHAPARRAL WATER DISTRICT SYSTEM.

A. The Chaparral Water District system is located within the Town of Fountain Hills and a portion of the City of Scottsdale in Maricopa County, Arizona. The overall service area covers approximately 12,178 acres (19.03 square miles) and there are approximately 13,945 customers during the test year within the service area. The topography within the service area ranges in elevation from 1,500 feet to 2,575 feet. Production facilities consist of the Shea Water Treatment Plant ("Shea WTP") which is a 15-million gallon per day ("MGD") surface water treatment plant employing a contact clarification and filtration process in three identical 5 MGD modules. The other production facilities are two groundwater wells, Well 10 and Well 11. Both Well 10 and Well 11 are used from June through September annually as firm supply and to ensure compliance with the U.S. Environmental Protection Agency disinfection byproducts regulations. Well 10 consists of a well with production capacity of 1,400 gallons per minute ("gpm") and includes a dual filter absorption arsenic removal facility. Well 11 consists of a well and local disinfection with a production capacity of 2,300 gpm. Without Well 10 and Well 11, the system would rely solely on the Shea WTP and the Central Arizona Project ("CAP") water source. Well 10 and Well 11 are also used annually in December to allow routine annual maintenance of the Shea WTP. Without Well 10 and Well 11, a failure at the Shea WTP or the CAP water delivery system would result in widespread water outages in the service area.

The Chaparral distribution system consists of eight above ground finished water storage reservoirs and eight pump stations. The storage reservoirs and pump stations provide a combination of both gravity and pumped storage to the system. The distribution network consists of approximately 220 miles of mains, ranging in size from 4-inches to 24-inches. The distribution system was incrementally constructed by a developer as new homes and additional sections were opened up to service.

Q. DOES THE CHAPARRAL WATER DISTRICT HAVE A TANK MAINTENANCE PROGRAM?

A. Yes. Decision No. 74568 (June 20, 2014) approved an 18-year tank maintenance program including total estimated maintenance costs of $3,639,307, or $202,184 per year as displayed in Exhibit JWS-1, page 3 of 9. The Company's Application requests continuation of this plan as approved by the Commission.

Q. DOES THE COMPANY HAVE A POA FOR THE CHAPARRAL TANK MAINTENANCE PROGRAM?

A. No, but the Company is proposing a POA consistent with the one in place for its Paradise Valley Water District. Mr. Boizelle discusses this POA (and the other proposed tank maintenance program POAs) in his Direct Testimony.

Q. DOES THE PROPOSED POA INCLUDE A PROVISION FOR A FINAL RECONCILIATION AND TRUE-UP OF THE PROGRAM COSTS TO COSTS EXPENDED FOR TANK MAINTENANCE?

A. Yes, it does. The final reconciliation would occur at the end of the 18-year program period.

D HAVASU WATER DISTRICT SYSTEM.

Q. PLEASE DESCRIBE THE HAVASU WATER DISTRICT.

A. At the time of filing this testimony, the Havasu Water District covers approximately 3,481 acres (5.44 square miles). There are approximately 1,896 customers during the test year in the district. Topography within the area currently serviced ranges in elevation from 475 feet to 770 feet, and the pipe network consists of approximately 30.8 miles of main, ranging in size from 2- to 16-inches. The Havasu Water District's water production facilities include ten production wells, five ground level storage tanks, five booster pump stations, and seven pressure regulating valves. This system also has an arsenic removal facility that uses an absorption media process that treats all water entering the distribution system.

Q. WILL THE HAVASU DISTRICT ALSO INCLUDE THE FORMER BROOKE WATER COMPANY SYSTEM IF THAT ACQUISITION IS APPROVED?

A. As of the docketing of this Application, the Commission has not yet approved EWAZ's proposed acquisition of Brooke Water's assets and system in Docket Nos. WS-01303A-19-0092 and W-03039A-19-0092. If that acquisition is approved, the Brooke Water assets and six water systems will become part of the Havasu Water District. The Company understands that there are approximately 2,100 customers between the six Brooke water systems as of September 30, 2019.

Q. CAN YOU PLEASE BRIEFLY DESCRIBE THE BROOKE WATER SYSTEMS?

A. Brooke is comprised of six non-contiguous water systems that are all located near Parker, Arizona in La Paz County. These systems are located in the Parker Strip area, along the east bank of the Colorado River and north of the Town of Parker, Arizona. All systems utilize water from the Colorado River, which is then filtered, chlorinated and delivered to customers. Specifically, surface water is pumped out

of the Colorado River and then treated with polymer, run through filters, chlorinated and then stored and distributed to customers. Brooke has the right to use the surface water based on a water allocation agreement it has with the United States Bureau of Reclamation ("U.S. BOR"). The approximately 2,100 customers Brooke currently services are a mix of seasonal and year-round residents. In the past few years Brooke Water has been replacing and repairing aged infrastructure to maintain service, but the overall system is old and in need of additional capital investment to ensure reliable service and compliance with drinking water quality standards. More detail about the Brooke water systems, including some of the challenges facing those systems, can be found in the testimonies in the acquisition docket I cited to earlier in my testimony.

Q. DOES THE HAVASU WATER DISTRICT ALSO HAVE A TANK MAINTENANCE PROGRAM?

A. Yes. Decision No. 73145 approved a 10-year tank maintenance program including total estimated maintenance costs of $763,200, or $76,320 per year as displayed in Exhibit JWS-1, page 4 of 9. The Company's Application requests a continuation of this plan as approved by the Commission.

Q. DOES THE COMPANY HAVE A POA FOR THE HAVASU TANK MAINTENANCE PROGRAM?

A. No, but the Company is proposing a POA consistent with the one in place for its Paradise Valley Water District, as discussed by Mr. Boizelle in his Direct Testimony.

Q. DOES THE PROPOSED POA INCLUDE A PROVISION FOR A FINAL RECONCILIATION AND TRUE-UP OF THE PROGRAM COSTS TO COSTS EXPENDED FOR TANK MAINTENANCE?

A. Yes, it does. The final reconciliation would occur at the end of the 10-year program period.

Q. ARE YOU AWARE WHETHER THE BROOKE WATER SYSTEM HAS A COMMISSION-APPROVED TANK MAINTENANCE PROGRAM IN EFFECT?

A. No.

Q. HOW WILL THE COMPANY HANDLE TANK MAINTENANCE FOR THE BROOKE WATER SYSTEM IF THE ACQUISITION IS APPROVED BY THE COMMISSION?

A. Without direct knowledge and operational experience with the Brooke Water system, it would be difficult to put together an estimation of a tank maintenance plan similar to the plans the Company has in other districts. Therefore, subject to the completion of that acquisition, the Company is requesting authorization to defer any required tank maintenance expenditures for recovery in a future rate case as discussed by Ms. Sheryl L. Hubbard in her Direct Testimony.

E MOHAVE WATER DISTRICT SYSTEM.

Q. PLEASE DESCRIBE THE MOHAVE WATER DISTRICT SYSTEM.

A. The Mohave Water District is located within Bullhead City and in unincorporated areas of Mohave County. The overall service area covers approximately 17,332 acres (27.07 square miles). There are approximately 16,619 customers in the district during the test year. The topography within the service area ranges in elevation from 590 feet to 1,260 feet. The Mohave Water District has one operating center and six separate water systems:

- The Bullhead City water system (Public Water System ("PWS") # 08-032), also

known as the Main System, serves a majority of the Bullhead City area in Mohave County, with a certificated area of approximately 23 square miles.

- The Camp Mohave water system (PWS # 08-037) serves an unincorporated portion of southern Bullhead City, Mohave County, with a 0.5 square mile certificated area.
- The Lake Mohave Highlands system (PWS # 08-062) serves an area located to the north of the main Bullhead City service area, with a service area of approximately 0.5 square miles.
- The Desert Foothills system (PWS # 08-137) serves an area in the northwest corner of the main Bullhead City service area, with a service area of approximately 2 square miles.
- The Rio Vista Ranches system (PWS # 08-333) serves a subdivision in southern Bullhead City, Mohave County, with a 0.5 square-mile certificated area.
- The Arizona Gateway system (PWS # 08-163) is located at the intersection of Highway 95 and Interstate 40 and is approximately 12 miles north of Lake Havasu City. This service area is approximately 0.75 square-miles and there are 13 commercial customers in this portion of the Mohave Water service territory.

Q. PLEASE DESCRIBE THE MOHAVE WATER DISTRICT WATER PRODUCTION, TREATMENT, AND DISTRIBUTION SYSTEM.

A. All of the systems within the Mohave Water District have their own water production, storage, and distribution facilities. All water in the Mohave Water District is provided from wells. The service territory includes varied, rocky and desert terrain. As a result, maintaining proper pressure in the many pressure zones is the primary operational challenge. The water distribution system consists of

approximately 199.7 miles of main, ranging in size from 2-inches to 18-inches. The treatment provided in the Mohave Water District is in the form of chlorination before the water enters the distribution system and there is an AdEdge AD26 oxidation/filtration technology for iron and manganese removal with a granular activated carbon filter for Total Organic Carbon ("TOC") reduction in the Camp Mohave system.

Q. PLEASE DESCRIBE EACH OF THE INDIVIDUAL PUBLIC WATER SYSTEMS THAT ARE WITHIN THE MOHAVE WATER DISTRICT.

A. The Bullhead City system consists of nine groundwater production wells, 15 storage tanks, two booster station sites, and a distribution system serving approximately 14,855 customers. The storage tanks provide a combination of both gravity and pumped storage for the system. There are currently 6.2 million gallons ("MG") of potential storage in the Main System.

The Camp Mohave system has one pumping site consisting of a well, a storage tank, pumping facilities and a distribution system serving 97 customers. This system is where the AdEdge AD26 iron and manganese removal plant with the granular activated carbon finishing filter for TOC reduction is located.

The Lake Mohave Highlands system is comprised of two production wells, two above-ground storage tanks, three booster pump stations and a distribution network serving 289 customers. The storage tanks provide pumped storage for the system with total volume of 0.27 MG. This system has an emergency tie-in with the recently acquired North Mohave system served by a 4-inch meter.

The Desert Foothills system is supplied by three production wells, three storage tanks, two booster pump stations and a distribution network serving 1,256 customers.

The storage tanks provide a combination of both gravity and pumped storage for the system with a total volume of 1.46 MG.

The Rio Vista Ranches system receives its water from the Bermuda Water Company through an interconnection with Bermuda Water Company (see Exhibit JWS-3, page 2 of 2). This system only has a distribution system serving approximately 132 customers.

The Arizona Gateway system is supplied by two wells and has one .35 MG storage tank and is serving 12 customers. This water system provides service to a few commercial gas stations at the intersection of U.S. Interstate 40 and AZ highway 95.

Q. DOES THE MOHAVE DISTRICT HAVE A TANK MAINTENANCE PROGRAM?

A. Yes. Decision No. 73145 (May 1, 2012) approved a 15-year tank maintenance program, including total estimated maintenance costs of $3,669,120, or $244,608 per year as shown in Exhibit JWS-1, page 5 of 9. The Company's Application includes continuation of this plan as approved by the Commission.

Q. DOES THE COMPANY HAVE A POA FOR THE MOHAVE TANK MAINTENANCE PROGRAM?

A. No, but the Company is proposing a POA consistent with the one in place for its Paradise Valley Water District, as addressed by Mr. Boizelle in his Direct Testimony.

Q. DOES THE PROPOSED POA INCLUDE A PROVISION FOR A FINAL RECONCILIATION AND TRUE-UP OF THE PROGRAM COSTS TO COSTS EXPENDED FOR TANK MAINTENANCE?

A. Yes, it does. The final reconciliation would occur at the end of the 15-year program period.

F NORTH MOHAVE WATER DISTRICT SYSTEM

Q. PLEASE DESCRIBE THE NORTH MOHAVE WATER DISTRICT SYSTEM.

A. The North Mohave Water District system is located to the north of the main Bullhead City service area and has a service area of approximate 3,829 acres (5.98-square miles). There are eight wells and seven storage tanks in the North Mohave system that provide service to approximately 2,124 customers during the test year. The topography of the North Mohave system is hilly with an elevation range of 700 feet to 1,500 feet.

Q. DOES THE NORTH MOHAVE WATER DISTRICT SYSTEM PROVIDE SIGNIFICANT OPERATIONAL BENEFITS TO THE LAKE MOHAVE HIGHLANDS AND DESERT FOOTHILLS SYSTEMS WITHIN THE MOHAVE WATER DISTRICT?

A. Yes. The acquisition of the North Mohave Water District system presented an opportunity to interconnect three separate water systems to build redundancy, emergency back-up, and also to eliminate the need for investment in additional storage. An integral strategy to effective water utility management is to establish interconnections which provide redundancy, emergency back-up, and the use of common facilities wherever possible. With EWAZ's acquisition of the North Mohave Water District system, the Company was able to cost-effectively establish interconnections with both the Lake Mohave Highland and the Desert Foothills systems (see Exhibit JWS-3, page 2 of 2). Specifically regarding the Lake Mohave Highland system, the topography within that system ranges from 590 feet to 1,000 feet. The Lake Mohave Highland system production and storage facilities are

located at the 590-foot elevation. Booster pumps are required to move water to the upper elevations of the Lake Mohave Highland system, and the volume of water that can be moved is affected by the capacity of the booster pumps as well as pressure at which those pumps must operate. The Company identified a need to install a 200,000 gallon storage tank at the higher elevation area of the Lake Mohave Highland system to ensure that proper water supply and pressure were maintained for all customers in the system. This storage tank was anticipated to cost approximately $1.9 million, which included construction of the reservoir as well as acquisition of land upon which to place the tank.

The acquisition of the North Mohave Water District system, however, eliminated the need for installation of this storage tank because it allowed interconnection of the North Mohave Water District system to the Lake Mohave Highland's water system at the 1,000-foot elevation. This interconnection, consisting of 268 feet of 8-inch pipe and costing $51,974, has created sufficient supply and pressure to properly service the upper elevations of the Lake Mohave Highland system and eliminated the need to install a new reservoir (see Exhibit JWS-3, page 2 of 2).

Q. WHAT BENEFITS HAS EWAZ ACHIEVED THROUGH THE INTERCONNECTION WITH THE DESERT FOOTHILLS SYSTEM?

A. The interconnection between the Desert Foothills and North Mohave water systems eliminated the need to install an additional well in the Desert Foothills system. The Desert Foothills system was identified as having a firm production deficit that needed to be addressed through the development of an additional well. When the North Mohave Water District system was acquired by the Company, an opportunity to interconnect the North Mohave Water District system with Desert Foothills (in lieu of developing a new well) became a viable alternative to drilling a new well. The

cost of this interconnect was $132,866.19 whereas the cost of an additional well would have been in the $1 million range, a significant savings to customers.

Q. IS IT FAIR TO SAY THAT THE INTERCONNECTION OF THESE THREE SYSTEMS IS AN EXAMPLE OF SUCCESSFULLY IMPLEMENTING EFFECTIVE WATER SYSTEM MANAGEMENT?

A. Yes. These two interconnections were constructed and placed into service in 2014 (Lake Mohave Highland) and 2016 (Desert Foothills), and are great examples of effectively interconnecting water utilities to build redundancy, emergency back-up, and operational efficiencies that benefit the utility and its customers. The Company avoided making two significant investments in a well of $1.0 million and a storage tank of $1.9 million saving the Mohave Water District's customers the costs associated with these investments. Interconnecting these systems has allowed them each to provide critical redundancy to each other without having to build that redundancy independently. These cost avoidances resulted from the purchase of the North Mohave Water District system and the two interconnections within the Mohave Water District and underlie the acquisition premium request that is discussed by Company witness Ms. Sheryl L. Hubbard.

Q. ARE THERE OTHER SHARED FACILITIES BETWEEN SYSTEMS IN THE DISTRICTS?

A. Yes. With the acquisition of the North Mohave and the Willow Valley systems, the Company has been able to consolidate the operations and customer care for these districts with the overall Mohave Water District operations. All operators are based in the Bullhead City area and stage from the same location. This allows the use of consolidated equipment as well as materials and supplies. All materials warehoused are now combined so the management of this process is also consolidated. On-call

duties have been consolidated to include coverage of these additional districts as well. Customer Care has also been consolidated into one customer care process that is managed by the four Customer Care staff-persons based out of the Company's Gemstone office.

Q. DOES THE NORTH MOHAVE WATER DISTRICT HAVE A TANK MAINTENANCE PROGRAM?

A. No, however, the Company is requesting approval from the Commission of a tank maintenance program for the North Mohave Water District in this Application. The Company's proposal here is modeled after tank maintenance programs that the Commission previously approved for certain of EWAZ's other water districts, such as for its Paradise Valley Water District.

Q. PLEASE PROVIDE BACKGROUND REGARDING THE REQUEST TO INCLUDE A TANK MAINTENANCE PROGRAM AS PART OF THE COST OF SERVICE FOR THE NORTH MOHAVE WATER DISTRICT.

A. There are two 500,000 gallon storage tanks and five 300,000 gallon storage tanks in the North Mohave Water District. The Company's proposed tank maintenance program is to span a period of twelve years and is designed to ensure that maintenance occurs at a frequency that balances the timing necessary to effectively extend the life of these assets through maintenance activities and in a manner that is not overly burdensome to customers. There is no clear-cut industry standard for frequency of tank maintenance. As such, the request is based on the number of tanks in the district, the size of those tanks, the age of the tanks and the material from which they are constructed.

The tank maintenance plan for the North Mohave system is based on a 12-year schedule as described in Exhibit JWS-1, page 6 of 9. The total anticipated cost for the 12-year tank maintenance program is estimated to be $1,375,000. This overall plan cost was derived from tank maintenance plans and repairs conducted in the Mohave Water District since its approval in 2012 and our knowledge of the condition of the tanks from operational experience. The costs included in the plan are associated with stripping, treating and coating the tanks, as well as installing cathodic protection and repairing and/or replacing exterior appurtenances such as ladders, manways, and tank valves which will be required for all finished water reservoirs in the plan. This will result in a normalized annual expense of $114,583 as set forth in Exhibit JWS-1, page 6 of 9.

Q. DOES THE COMPANY HAVE A POA FOR THE PROPOSED NORTH MOHAVE TANK MAINTENANCE PROGRAM?

A. The Company is proposing a POA consistent with the one in place for its Paradise Valley Water District, as discussed by Mr. Boizelle in his Direct Testimony. The proposed POA includes a provision for a final reconciliation that would occur at the end of the 12-year program period.

G PARADISE VALLEY WATER DISTRICT SYSTEM.

Q. PLEASE DESCRIBE THE PARADISE VALLEY WATER DISTRICT.

A. The Paradise Valley Water District is located in Maricopa County. It serves approximately half of the Town of Paradise Valley and portions of the City of Scottsdale. There are approximately 5,042 customers during the test year in the district.

Q. PLEASE DESCRIBE THE PARADISE VALLEY WATER PRODUCTION AND DISTRIBUTION SYSTEM.

A. Our Paradise Valley Water District customers currently receive treated water from six wells located on the eastern edge of the service territory. The wells range in depth from 1,000 feet to 1,800 feet and have flow rates from 1,300 gpm to 2,900 gpm. The distribution system covers about 5,851 acres (9.1 square miles) and consists of approximately 129 miles of mains ranging in size from two inches to 30 inches in diameter. The system has nine pressure zones due to the varying elevations in the service area. The combined capacity of the 11 storage tanks is 4.529 million gallons. All water from our Paradise Valley Water wells is pumped to the Paradise Valley Arsenic Removal Facility for chlorination, storage and arsenic removal. There is also an interconnection with the City of Phoenix that allows the CAP allocation of the Paradise Valley District to be treated at the Phoenix 24th Street water treatment plant and delivered to the Paradise Valley District Country Club Booster Station for use in the western portion of the service territory. This interconnect, which has been in service since March 10, 2020, has added much needed redundancy, is allowing the use of the Company's CAP allocation directly for Paradise Valley customers, and adds a water source in the western portion of the service territory.

Q. DOES THE PARADISE VALLEY DISTRICT HAVE A TANK MAINTENANCE PROGRAM?

A. Yes. Decision No. 75268 (September 8, 2015) approved a 14-year tank maintenance program including total estimated maintenance costs of $1,731,208, or $123,658 per year as displayed in Exhibit JWS-1, page 7 of 9. The Company's Application

includes continuation of this plan as approved by the Commission and the Company is not proposing to adjust the tank maintenance program at this time.

Q. DOES THE POA FOR THE PARADISE VALLEY WATER DISTRICT INCLUDE A PROVISION FOR A FINAL RECONCILIATION AND TRUE-UP OF THE PROGRAM COSTS TO COSTS EXPENDED FOR TANK MAINTENANCE?

A. Yes, it does. The final reconciliation would occur at the end of the 14-year program period.

H SUN CITY WATER DISTRICT

Q. PLEASE DESCRIBE THE SUN CITY WATER DISTRICT.

A. The Sun City Water District service area is in Maricopa County and is bounded by the Agua Fria River on the west, Beardsley Road on the north, 91st Avenue on the east and Olive Avenue on the south. There is a smaller island of service in the Tierra Del Rio development that is not physically interconnected with Sun City between Happy Valley Road and Keyser Drive. The Sun City Water District is approximately 12,481 acres (19.5 square miles) in total area and there are approximately 25,018 customers during the test year in the Sun City Water District in the test year. The district is almost entirely built out with the exception of the Tierra Del Rio area.

Q. PLEASE DESCRIBE THE SUN CITY WATER PRODUCTION AND DISTRIBUTION SYSTEM.

A. All Sun City Water District customers receive groundwater produced from 28 wells ranging in depth from 600 feet to 1360 feet below ground surface. Two of the 29 wells are irrigation wells to serve the Coyote Lakes Golf Course. The oldest well in the system was drilled in 1947. Well water is then directed to one of the nine water

plants, where it is chlorinated, stored in tanks and then pushed into the distribution system to satisfy daily demands. There are fourteen water storage tanks, many built in the late 1950s and 1960s, ranging in storage volume from 300,000 to 1,500,000 gallons, with a total storage volume of 10,750,000 gallons. The storage tanks are maintained under an existing tank maintenance program approved by the Commission. There are approximately 310 miles of water mains, almost 6,000 valves and over 2,000 fire hydrants in the Sun City Water District. Sun City Water District has an annual CAP allocation of 4,189 acre feet which is recharged through the MWD Groundwater Savings Facility. The biggest challenge in the Sun City Water District is that a great deal of the infrastructure is beyond its useful service life and in need of frequent repairs and/or replacement.

Q. PLEASE PROVIDE SOME BACKGROUND REGARDING WELL AND WATER LINE REPLACEMENT IN THE SUN CITY WATER DISTRICT.

A. Due to the extended age of many of the wells in Sun City, the Company has experienced a series of well failures that often occur with little or no advance warning and result in a complete loss of production from the specific well in question. When a well fails, it takes 18 to 24 months to replace the well and restore that volume of production. Because we must provide uninterrupted water service to all of our customers, it is essential to maintain adequate well system redundancy so that a catastrophic well failure does not disrupt service. In the Sun City Water District, the Company has established a well replacement program to gradually retire our oldest and most troublesome wells and replace them prior to failure, or begin replacement as soon as a well fails. Over the last five years we have replaced or are replacing Wells 1.1, 6.3 and 8.2 with Wells 1.1B, 6.3B and 8.2B.

In the Coyote Lakes subdivision, the Company has experienced an unusually high number of water main breaks over the past several years. Further investigation revealed that substandard pipe materials and improper bedding of the water mains when they were originally installed by the developer were the root cause of these repeated failures. The Company made a decision to replace a large portion of the water mains in Coyote Lakes with new pipe, and this project will be completed in four phases. Phase 4 of the project is discussed in greater detail below as a post-test year project.

Q. DOES THE SUN CITY WATER DISTRICT HAVE AN APPROVED TANK MAINTENANCE PROGRAM?

A. Yes. Commission Decision No. 72047, issued January 6, 2011, approved a 14-year tank maintenance program including total estimated maintenance costs of $5,070,624, or $362,187 per year as displayed in Exhibit JWS-1, page 8 of 9. The Company's Application requests continuation of this plan as previously approved.

Q. DOES THE COMPANY HAVE A POA FOR THE SUN CITY TANK MAINTENANCE PROGRAM?

A. No, but the Company is proposing a POA consistent with the one in place for its Paradise Valley Water District through its witness Mr. Jon P. Boizelle.

Q. DOES THE PROPOSED POA INCLUDE A PROVISION FOR A FINAL RECONCILIATION AND TRUE-UP OF THE PROGRAM COSTS TO COSTS EXPENDED FOR TANK MAINTENANCE?

A. Yes, it does. The final reconciliation would occur at the end of the 14-year program period.

I SUN CITY WEST WATER DISTRICT

Q. PLEASE DESCRIBE THE SUN CITY WEST WATER DISTRICT.

A. The Sun City West Water District service area is in Maricopa County and is bounded by Grand Avenue on the west, Loop 303 on the north, El Mirage Road on the east and Bell Road to the south. The Sun City West Water District is 7,423 acres (11.6 square miles) in total area and there are approximately 15,383 customers in the Sun City West Water District in the test year. The water supply for Sun City West includes a 2,372 acre-foot per year CAP allocation which is delivered to the Maricopa Municipal Water Conservation District Number One Groundwater Replenishment District and then indirectly recovered through groundwater pumping within Sun City West. The district is almost entirely built out, with primarily residential land uses and some commercial lands.

Q. PLEASE DESCRIBE THE SUN CITY WEST WATER PRODUCTION AND DISTRIBUTION SYSTEM.

A. All Sun City West Water District customers receive groundwater produced from 10 wells ranging in depth from 700 feet to 1,200 feet below ground surface. The oldest well in the system was drilled in 1947. Well water is then directed via transmission mains to one of two water plants where it is treated for arsenic removal, chlorinated, stored in tanks and then pushed into the distribution system to satisfy daily demands. There are four water storage tanks built between 1979 and 1992 with a total storage volume of almost 4,000,000 gallons. There are approximately 195 miles of water mains, almost 4,000 valves and 1,250 fire hydrants in the Sun City West Water District.

Q. PLEASE PROVIDE SOME BACKGROUND REGARDING SYSTEM INTERCONNECTIONS FOR SUN CITY WEST.

A. There are two metered points of interconnection between the Sun City West Water District and the Agua Fria Water District (see Exhibit JWS-2). One interconnect is a 12-inch line beneath Grand Avenue at Meeker Boulevard, and the other is a 12-inch line along the Williams Drive alignment at the boundary of Sun City West and the Corte Bella subdivision. Both interconnects provide system flexibility and production redundancy in the event of an unanticipated well or water plant failure in either district. Water can be measured while being moved in either direction to supplement current production capacity in the event of an emergency.

Q. PLEASE PROVIDE SOME BACKGROUND REGARDING THE REQUEST TO INCLUDE A TANK MAINTENANCE PROGRAM AS PART OF THE COST OF SERVICE FOR THE SUN CITY WEST WATER DISTRICT.

A. There are four finished water reservoirs in the Sun City West Water District. The in-service dates of the storage reservoirs are 1979 (SCW WP1 Tank 1), two in 1987 (SCW WP2), and one in 1992 (SCW WP1 Tank 2). A tank maintenance plan for Sun City West is proposed to span a period of eight years and was developed to ensure that maintenance occurs at a frequency that balances the timing necessary to effectively extend the life of these assets through maintenance activities and in a manner that is not overly burdensome to customers. Factors such as the number of tanks and the flexibility in taking the tanks out of service were considered. The spacing over a two year period for each tank allows time to get the necessary work completed. There is limited flexibility taking tanks in and out of service in Sun City West. There is no clear cut industry standard for frequency of tank maintenance, and

as such, the request is based on the number of tanks in the district, the size of those tanks, the age of the tanks and the material from which they are constructed.

Q. DOES THE SUN CITY WEST WATER DISTRICT HAVE A TANK MAINTENANCE PROGRAM PROPOSAL?

A. Yes, as described in detail in Exhibit JWS-1, page 9 of 9, the tank maintenance plan for the Sun City West system is based on an eight-year schedule. The total anticipated cost for the eight-year reservoir maintenance plan is estimated to be $1,817,130. This overall plan cost was derived from inspections conducted on the tanks in question by Arizona Coating Applicators in 2015 as well as tank maintenance repairs the Company has completed recently in the Sun City Water District. The costs included in the plan are associated with stripping, treating and coating the tanks, as well as installing cathodic protection and repairing and/or replacing exterior appurtenances such as ladders, manholes, and tank valves which will be required for all finished water reservoirs in the plan. This will result in an average annual expense of $227,141 as set forth in Exhibit JWS-1, page 9 of 9.

Q. DOES THE COMPANY HAVE POA FOR THE PROPOSED SUN CITY WEST TANK MAINTENANCE PROGRAM?

A. The Company is proposing a POA consistent with the one in place for its Paradise Valley Water District through its witness Mr. Jon P. Boizelle. The proposed POA includes a provision for a final reconciliation that would occur at the end of the eight-year program period.

J TUBAC WATER DISTRICT SYSTEM.

Q. PLEASE DESCRIBE THE TUBAC WATER SYSTEM.

A. The Tubac Water District supplies potable water to the community of Tubac, which is located in Santa Cruz County in southern Arizona. The overall service area covers approximately 4,153 acres (6.5 square miles) and consists of approximately 625 customers. The Tubac system consists of three wells having a combined well capacity of 1,300 gpm, one 500 gpm arsenic treatment facility capable of split stream treatment allowing up to 1,000 gpm production, and one storage tank with a capacity of 50,000 gallons. The arsenic treatment facility consists of a 500 gpm granular iron media treatment facility located at the Well 5 site. Equipment includes two 9-ft diameter Severn Trent GIM arsenic removal vessels using Bayoxide E33 Media, facility piping and instrumentation. The two 9-ft diameter vessels are operated in a lead-lag configuration to extend the life of the arsenic media and lower O&M costs. The media lifecycle on these vessels generally ranges from 12 to 18 months dependent on the influent arsenic concentrations.

K WILLOW VALLEY WATER DISTRICT SYSTEM.

Q. PLEASE DESCRIBE THE WILLOW VALLEY WATER DISTRICT SYSTEM.

A. The Willow Valley Water District is located in the Mohave Valley within Mohave County. The overall service area covers approximately 2,745 acres (4.3 square miles). There are approximately 1,549 customers during the test year in the district. Topography within the area is relatively flat and the pipe network consists of approximately 126,729 feet of main ranging in size from 2 inches to 10 inches. The Willow Valley Water District has one operating center and two separate water systems:

- The King Street system (PWS # 08-040) serves the majority of the Willow Valley area in Mohave County, with a service area of approximately 350 acres.

- The Cimarron system (PWS # 08-129) serves a smaller portion of customers to the east of Highway 95 in Mohave County, with a service area of approximately 120 acres.

Q. PLEASE DESCRIBE THE WILLOW VALLEY WATER DISTRICT WATER PRODUCTION, TREATMENT, AND DISTRIBUTION SYSTEM.

A. The two systems within the Willow Valley Water District each have their own water production, storage, and distribution facilities. All water in the Willow Valley Water District is provided from wells. The water quality has elevated levels of iron and manganese, and as a result, treatment to control these constituents is the primary operational challenge. Each of the separate public water systems employs a chlorine dioxide and filtration treatment process which is designed to oxidize the iron and manganese from the source water.

Specifically, the King Street system has two wells that are all routed through a central chlorine dioxide and filtration treatment system. There are approximately 1,547 customers connected to the King Street system. The Cimarron system has two wells that are all routed through a central chlorine dioxide and filtration treatment system. There are approximately 131 customers connected to the Cimarron system.

Q. DOES THE WILLOW VALLEY WATER DISTRICT HAVE A TANK MAINTENANCE PROGRAM?

A. No. But the Willow Valley Water District only has two tanks to be maintained; and one of those tanks recently had rehabilitation and maintenance performed in 2017. Since there is only one more tank to maintain, the Company is requesting authorization by the Commission for deferral accounting to allow EWAZ to defer tank maintenance costs at the time the second tank is maintained. Deferral

accounting will enable the Company to spread the costs of that future maintenance over more than one period for recovery from customers.

IV. NON-REVENUE WATER

Q. IN DECISION NO. 73145, THE COMMISSION DIRECTED THE COMPANY TO FILE FIVE-YEAR PLANS TO ADDRESS NON-REVENUE WATER ("NRW") IN THE MOHAVE AND HAVASU WATER DISTRICTS. HAS THE COMPANY COMPLIED WITH THE COMMISSION'S DECISION?

A. Yes. The Company submitted Five-Year Plans for the Mohave and Havasu Water Districts on March 1, 2013 and a Modified Five-Year Plan for the Havasu Water District on December 12, 2016 in response to a request from the Utilities Division Staff.

Q. HAVE THE NRW STATISTICS IN THE MOHAVE WATER DISTRICT BEEN REDUCED FROM THE LEVEL EXPERIENCED DURING THE TEST YEAR IN DOCKET NO. W-01303A-10-0448?

A. Yes. The NRW in the test year ended June 30, 2010 was 19.27 percent in the Mohave Water District. At the end of the 2019 test year, the 12-month rolling NRW in the Mohave District was 17.02%, or an overall non-revenue water reduction of approximately 12% from the 2010 figure.

Q. HAVE THE NRW STATISTICS IN THE HAVASU WATER DISTRICT BEEN REDUCED FROM THE LEVEL EXPERIENCED DURING THE TEST YEAR IN DOCKET NO. W-01303A-10-0448?

A. Yes. The NRW in the test year ended June 30, 2010 was 19.26 percent in the Havasu Water District. At the end of the 2019 test year, the 12-month rolling average NRW was at 14.93%, which is a 22% reduction over that timeframe. The approach that is

being employed is the same approach being used across all EWAZ water districts. This approach involves testing segments of the distribution system for leaks that are not surfacing and making any necessary repairs or replacements. This approach to NRW reduction is very effective; however, it is very capital intensive and takes time to manifest itself in water loss reductions as reflected in non-revenue water reporting. EWAZ also continues to explore and use innovative methods for detecting underground water leaks by using technology such as infrared imaging to precisely located leaks that are not surfacing which allows repairs to be made in the most efficient and cost conscious manner. It should be noted that while EWAZ has been making substantial capital investments to reduce NRW, the existing distribution system continues to age, so this remains an ongoing effort.

Q. WHEN THE COMPANY ACQUIRED THE WILLOW VALLEY SYSTEM FROM GLOBAL WATER RESOURCES, INC. IN MAY 2016, DID WILLOW VALLEY ALSO HAVE HIGH WATER LOSS STATISTICS WITH COMMISSION COMPLIANCE REPORTING RESPONSIBILITIES?

A. Yes. And as a condition of the acquisition, the Commission ordered EWAZ to submit a report containing a detailed analysis and plan to reduce water loss in the Willow Valley Water system to 10 percent or less or alternatively, a detailed cost benefit analysis supporting Willow Valley's conclusion that it would not be cost effective to reduce water losses in the Willow Valley system to less than 10 percent.[1]

Q. WHEN WAS THIS REPORT DUE TO THE COMMISSION?

A. The Commission had given the Company 90 days from the date of the Decision in which to file the compliance item. That provided EWAZ until June 8, 2016 for the report to be submitted, which was only 30 days after the purchase transaction closed.

[1] Decision No. 75484 (March 10, 2016) at 19.

Since the acquisition transaction did not close until May 9, 2016, the Company sought an extension of the deadline to file its report, and the Commission granted an extension until December 31, 2016. The report was filed on December 29, 2016.

Q. WHAT WAS THE PERCENTAGE OF WATER LOST IN 2014 WHEN THE COMMISSION ORDERED THE MONITORING OF WATER LOSSES BY WILLOW VALLEY?

A. The water loss in the Willow Valley system exceeded 27 percent in 2014.

Q. PLEASE DISCUSS THE NRW STATISTICS FOR THE WILLOW VALLEY WATER DISTRICT SINCE THE COMPANY TOOK OVER OWNERSHIP FROM GLOBAL WATER RESOURCES, INC. IN MAY OF 2016.

A. EWAZ implemented water auditing as a routine business practice using a method that has clearly defined terms and meaningful performance indicators for Willow Valley. The Non-Revenue Water Program assists each district in identifying where water losses are occurring and also expresses, by volume and percentage, how much water is lost. At the end of the 2019 test year, the 12 month rolling NRW in Willow Valley was 17.06%.

V. POST-TEST YEAR PLANT ADDITIONS

Q. IS THE COMPANY PROPOSING INCLUSION OF POST-TEST YEAR PLANT ADDITIONS IN THIS PROCEEDING?

A. Yes. The Company is seeking the inclusion in rate base of certain post-test year plant additions for a period of 12 months following the end of the test year (*i.e.*, for projects completed and in service by December 31, 2020). Post-test year plant additions are capital investments that are necessary to continue to provide safe, reliable water service to our customers. The Company's capital investment is

focused on replacement of aging or failing infrastructure, which not only helps provide uninterrupted service but also helps control maintenance and electricity expenses that directly benefit customers. A 12-month period is requested, in part, due to the amount of investment needed in our water systems, as well as the complexity of certain capital projects that were initiated in the test year, with design and construction taking anywhere from 12 to 24 months to complete before putting new infrastructure in service.

Q. PLEASE GENERALLY DESCRIBE THE POST-TEST YEAR PLANT REQUEST.

A. There are post-test year projects in each of EWAZ's eleven water districts in Arizona. In addition, this rate application includes post-test year projects at the corporate level that facilitate the provision of water in each of the eleven districts. The costs of these "shared" projects are allocated to the water districts. As discussed in the testimony of Mr. Jon Boizelle, the Company is proposing post-test year plant additions totaling $56,784,484 for all of its water districts – consisting of the projects summarized in Table 1 below. All of the proposed additions to plant are necessary investments for the Company to continue to provide its test-year customers with safe and reliable water services. All of the plant included in this Application will be used and useful by December 31, 2020.

Q. IS THE COMPANY CONSISTENTLY UNDERTAKING CAPITAL PROJECTS REGARDLESS OF THE TEST YEAR FOR A RATE CASE?

A. Yes. As EWAZ has stated in prior proceedings, the Company is consistently making capital improvements to ensure safe and reliable service to its existing customers. Given the age of the existing infrastructure, with large portions originally installed in the 1960s, capital improvements must be made. Attempts

are made to rehabilitate infrastructure whenever possible in lieu of replacement, and some of the post-test year projects are rehabilitation projects. That said, many projects require replacements – for example, when it is discovered that plant is in much worse condition than anticipated when commencing a project. The Company would be making these investments regardless of the test year and independent of filing this rate case. Please see the testimony of Mr. Thomas A. Loquvam for a more detailed discussion regarding why the Company believes it is appropriate to include the 12 months of post-test year plant reflected in this rate application.

Q. PLEASE SUMMARIZE THE POST-TEST YEAR PLANT THAT THE COMPANY WILL COMPLETE BEFORE DECEMBER 31, 2020, AND HAS INCLUDED IN THIS REQUEST.

A. The following Table 1 summarizes the post-test year plant that will be in service to serve its existing customers by December 31, 2020, and is included in the request. Table 1 is organized by NARUC Account.

Table 1 Summary of Post Test Year Plant Additions by NARUC Account

NARUC ACCT. NO.	DESCRIPTION	TOTAL POST TEST YEAR PLANT
304100	Structures & Improvements Supply	$ 287,389
304200	Structures & Improvements Pumping	$ 25,000
304300	Structures & Improvements Treatment	$ 2,474,124
304500	Structures & Improvements General	$ 65,000
304600	Structures & Improvements Offices	$ 140,218
304800	Structures & Improvements Miscellaneous	$ 207,350
307000	Wells & Springs	$ 7,720,414
310000	Power Production Equipment	$ 183,964
311200	Pumping Equipment Electric	$ 5,049,552
311500	Pumping Equipment Other	$ 22,640

311530	Pumping Equipment Water Treatment	$ 93,000
320100	Water Treatment Equipment Non-Media	$ 1,919,579
330000	Distribution Reservoirs & Standpipes	$ 375,833
330100	Elevated Tank & Standpipes	$ 1,604
330200	Ground Level Tanks	$ 17,482
331001	TD Mains Not Classified by Size	$ 7,110,413
331100	TD Mains 4in & Less	$ 117,075
331200	TD Mains 6in to 8in	$ 5,492,455
331300	TD Mains 10in to 16in	$ 6,163,447
331400	TD Mains 18in & Grtr	$ 8,442,417
333000	Services	$ 3,307,840
334100	Meters	$ 3,831,694
335000	Hydrants	$ 870,796
336000	Backflow Prevention Devices	$ 1,728
339200	Other P/E-Supply	$ 190,000
339600	Other P/E-CPS	$ 687,817
340200	Computer & Periphal Equipment	$ 254,576
340300	Computer Software	$ 133,135
343000	Tools,Shop,Garage Equipment	$ 19,350
346100	Communication Equipment Non-Telephone	$ 658,935
346190	Remote Control & Instrument	$ 1,737,442
348000	Other Tangible Plant	$ 45,000
	GRAND TOTAL	**$56,784,484**

Q. PLEASE CLARIFY HOW CAPITAL PROJECTS PROGRESS THROUGHOUT EACH YEAR?

A. When looking at post-test year plant (dollar values in particular), it is important to understand that capital projects in progress, but not yet completed, are fluid. This means that the cost to complete the project may fluctuate up or down from the original estimate. Projects are planned, designed, and constructed in the most cost-effective manner possible, and EWAZ's capital budgets are developed based on the estimated cost of this effort. While every effort is made to complete all projects at the budgeted levels established during project development, inevitably unanticipated circumstances arise that may increase or decrease the costs over

what was budgeted. Importantly, the fluid nature of these projects is not a one-way street.

Regarding the amounts presented in this testimony, these values are comprised of forecasted estimated costs from January 1, 2020, through December 31, 2020. EWAZ will update these values in its rebuttal filing to reflect only actual expenses. To be clear, while the numbers are estimates, they are based on a comprehensive planning, budgeting, and forecasting process.

Q. PLEASE INDICATE HOW YOU WILL DESCRIBE THE POST-TEST YEAR PLANT ADDITIONS TO BE COMPLETED BY DECEMBER 31, 2020, IN YOUR TESTIMONY.

A. I will describe the types of post-test year projects by NARUC Account, including specific projects included in the request for post-test year plant.

A NARUC ACCOUNT NO. 304300 – STRUCTURES & IMPROVEMENTS – TREATMENT

Q. PLEASE DESCRIBE PROJECTS ASSOCIATED WITH NARUC ACCOUNT NO. 304300 (STRUCTURES & IMPROVEMENTS – TREATMENT).

A. This account includes the cost to place in service structures and improvements for water treatment. An example of a post-test year project in this account is the following:

- **Project No. 1005449 (Shea Water Treatment Plant Improvements and Upgrades)**

Q. PLEASE DESCRIBE PROJECT NO. 1005449 (SHEA WTP IMPROVEMENTS AND UPGRADES) IN THE CHAPARRAL WATER DISTRICT.

A. The purpose of this project was to remove old, failing and outdated chemical storage and transfer tanks, pumps and piping used in the surface water treatment process. The project included four new chemical resistant bulk tanks, three day tanks, six peristaltic feed pumps, three chemical transfer pumps, two eyewash stations, all new schedule 80 PVC piping and valves, chemical injection quills, replacement of aged and cracking concrete tank storage pads, replacement of aged electrical wiring, panels and control cabinets, and a new roof over the chemical storage building.

B NARUC ACCOUNT NO. 307000 (WELLS & SPRINGS)

Q. REGARDING NARUC ACCOUNT NO. 307000 (WELLS & SPRINGS), PLEASE DESCRIBE POST-TEST YEAR PROJECTS UNDER THAT ACCOUNT.

A. Projects that fall within this NARUC account are necessary for the rehabilitation, replacement, and/or improvement of potable water supply wells and equipment, and other related infrastructure necessary in order to reliably and effectively distribute water throughout the service area. A number of projects are budgeted and completed each year in each district to keep existing potable water supply wells in service. The Company has also initiated a well replacement program in key districts for the replacement of older wells due to declining production and prior to failure. The following are examples of this type of project:

- **Project No. 1006794 (Northeast Agua Fria (NEAF) Well 200.1)**
- **Project No. 1009094 (Sun City Well 2.2 Rehabilitation)**

Q. PLEASE DESCRIBE PROJECT NO. 1006794 (NEAF WELL 200.1) IN THE AGUA FRIA WATER DISTRICT.

A. Zone 2 of the Northeast Agua Fria ("NEAF") system had only one source of water—water from Water Plant ("WP") 100 in Corte Bella via WP 300 through a single 16-inch transmission main. WP 300 is located on leased state land and was constructed in 2004 as a temporary in-line booster pump station. WP 300 serves the Rancho Cabrillo and Coldwater Ranch developments. EWAZ owns four potential well sites and one water plant site (future WP 200) in the NEAF Zone 2 area. Well 200.1 is one of these well sites. The well was drilled in 2006 and EWAZ has a non-exempt permit to operate this well at 1,582 acre feet per year. The well is located at the southwest corner of Happy Valley Road and Dysart Road.

The site is walled in and has sufficient space for the well, a small chlorine contact/storage tank and a booster pump station. This project included the design and construction of well equipment, booster pump equipment and site improvements. The project also included construction of a chlorination system and 100,000 gallon chlorine contact/storage tank and installation of SCADA and security to meet EWAZ requirements.

Q. PLEASE DESCRIBE PROJECT NO. 1009094 (SUN CITY WELL 2.2 REHABILITATION) IN THE SUN CITY WATER DISTRICT.

A. The original existing well 2.2 was drilled approximately 70 years ago at a depth of approximately 700 ft. The current rehabilitation project includes relining of the existing well casing, new well pump and motor, new flow meter, electrical gear to include service entrance section and motor control cabinet, miscellaneous piping and appurtenances.

C NARUC ACCOUNT NO. 311200 (PUMPING EQUIPMENT ELECTRIC)

Q. PLEASE DESCRIBE EXAMPLES OF THE POST-TEST YEAR PROJECTS UNDER NARUC ACCOUNT NO. 311200 (PUMPING EQUIPMENT – ELECTRIC).

A. This account includes the cost of pumping equipment driven by electric power. Items included in this account include pumps, regulating and recording devices, engines, motors and other components that drive pumps. The following is an example of a post-test year project in this account:

- **Project No. 1009098 (Agua Fria Plant 12 Low Zone Booster Pump Station Design and Construction)**

Q. PLEASE DESCRIBE PROJECT NO. 1009098 (AGUA FRIA PLANT 12 LOW ZONE BOOSTER PUMP STATION DESIGN AND CONSTRUCTION) IN THE AGUA FRIA WATER DISTRICT.

A. The Water Plant 12 booster pump station has the potential to feed two separate pressure zones, high and low. Currently all water must be pumped from the high zone portion of the booster station. The low zone portion is not equipped. Water is fed to the low zone via the high zone through two PRV's. Increased demand in the low zone requires direct feed from Plant 12 into the low zone. This project outfits the low zone portion of the booster station. This includes the addition of three booster pumps and motors, hydro-pneumatic tank, valving, piping and appurtenances.

D NARUC ACCOUNT NO. 320100 (WATER TREATMENT EQUIPMENT – NON MEDIA)

Q. PLEASE DESCRIBE POST-TEST YEAR PROJECTS UNDER NARUC ACCOUNT NO. 320100 (WATER TREATMENT EQUIPMENT – NON-MEDIA).

A. This account includes the costs of installed equipment and facilities for the treatment of water, including aerators, chemical treatment plant, disinfection equipment, filter plant and reverse osmosis membranes. During the post-test year, the Company performed important projects in multiple districts under this account to ensure safe and reliable water service.

E NARUC ACCOUNT NO. 330000 (DISTRIBUTION RESERVOIRS & STANDPIPES)

Q. PLEASE DESCRIBE PROJECTS ASSOCIATED WITH NARUC ACCOUNT NO. 330000 (DISTRIBUTION RESERVOIRS & STANDPIPES).

A. This account includes the cost to place in service, reservoirs, tanks, standpipes, and equipment used to store water for distribution. During the post-test year, the Company performed important projects in numerous districts under this account to ensure safe and reliable water service.

F TRANSMISSION AND DISTRIBUTION MAINS

Q. PLEASE GENERALLY DESCRIBE PROJECTS RELATING TO TRANSMISSION AND DISTRIBUTION MAINS.

A. Generally speaking, Transmission and Distribution ("T&D") Mains accounts are separated by size pursuant to NARUC accounting procedures. Account 331100 is for those T&D mains 4 inches and less, 331200 is for those T&D mains 6 inches to 8 inches, 331300 is for those T&D mains 10 inches to 16 inches, and 331400 is

for those T&D mains 18 inches and larger. Account 331001 is for mains not classified by size and may be used when a project has varying sizes of mains and no specific NARUC account is applicable.

Q. PLEASE DESCRIBE EXAMPLES OF THE POST-TEST YEAR PROJECTS UNDER NARUC ACCOUNT NO. 331001 (TD MAINS NOT CLASSIFIED BY SIZE).

A. Projects that fall under this category are necessary for the rehabilitation and replacement of water distribution mains and valves, and other related infrastructure necessary to reliably and effectively distribute water throughout the service area. A number of projects are budgeted and completed each year in each district to keep the existing water distribution system operating reliably.

The post-test year projects in this account include main replacement and break projects and important projects addressing valves.

1 Main Replacement and Break Projects

Q. PLEASE DESCRIBE THE PURPOSE AND IMPORTANCE OF MAIN REPLACEMENT PROJECTS.

A. Capital funds are budgeted and expended on an annual basis to address breaks and leaks of existing water mains in the distribution system. The Company has initiated water main replacement projects to address systems in areas with known deficiencies, such as older mains and valves; undersized mains; and mains that have experienced leaks and failures in the past, but must also address emergencies as they arise. Properly operating water mains are critical to ensuring service continuity and in reducing water lost through main breaks. Ensuring that mains are operating properly and water loss is kept at a minimum is beneficial to

customers because it improves the reliability of service and reduces the costs to provide water.

2 Valve Replacement Projects

Q. PLEASE DESCRIBE THE PURPOSE AND IMPORTANCE OF VALVE REPLACEMENT PROJECTS.

A. Capital funds are budgeted and expended on an annual basis to address broken or inoperable valves. The Company exercises valves on a five-year cycle as part of an ongoing maintenance program to extend the life of valves and keep them operable. As crews come across valves that are broken or no longer operable, they are replaced so that the system can be operated efficiently. This is particularly important during an emergency event, such as a water main break, so that it can be isolated quickly to minimize damage, reduce water losses and limit the number of customers impacted by these type of events. The ability to isolate sections of the distribution network is critical to safe and reliable operations. Some mains have high pressure and water loss can be very significant if a water main break cannot be isolated effectively. Operable valves are necessary to isolate a break and minimize water loss. Further, having valves that are operable is important as high pressure also presents a health and safety hazard when repairs are required and isolation cannot be achieved. These projects are critical for the safety and reliability of system operations.

G NARUC ACCOUNT NO. 331200 TRANSMISSION AND DISTRIBUTION MAINS (6 INCHES TO 8 INCHES)

Q. PLEASE DESCRIBE PROJECTS CODED TO NARUC ACCOUNT NO. 331200, TRANSMISSION AND DISTRIBUTION MAINS 6 INCHES TO 8 INCHES.

A. The Company has initiated several water main replacement projects to address systems in areas with known deficiencies, such as older mains and valves; undersized mains; mains that have experienced leaks and failures; and valves that are no longer operable.

H NARUC ACCOUNT 331300 (TD Mains 10 inches to 16 INCHES)

Q. PLEASE DESCRIBE SOME OF THE PROJECTS CODED TO NARUC ACCOUNT NO. 331300, TRANSMISSION AND DISTRIBUTION 10 INCHES TO 16 INCHES.

A. The Company has also initiated water main replacement projects to address larger mains in this category. An example of a post-test year project in this account is the following:

- **Project No. 1008752 (Coyote Lakes Replacement Phase 4)**

Q. **PLEASE DESCRIBE PROJECT NO. 1008752 (COYOTE LAKES REPLACEMENT PHASE 4) IN THE SUN CITY WATER DISTRICT.**

A. The water mains in the Coyote Lakes residential development were comprised of C-900 pipe, constructed and installed in native soil without proper bedding, resulting in multiple leaks due to rocks puncturing and cracking the pipe. These water main breaks significantly contributed to lost water in the district. Replacing the mains will help reduce system water loss and improve system reliability. Although it is difficult to specifically quantify the water lost at Coyote Lakes, a significant portion of this amount of lost water in this water district is a result of the number of breaks and leaks in the Coyote Lakes system as there have been 26 pipe breaks in this area since 2014. In addition, upsizing sections of the 8-inch main to 12-inch pipe which will reduce pressure losses and more reliably supply the system with adequate water supply and pressure.

I NARUC ACCOUNT 331400 (TD Mains 18 inches & Greater)

Q. PLEASE DESCRIBE PROJECTS CODED TO NARUC ACCOUNT NO. 331400, TRANSMISSION AND DISTRIBUTION 18 INCHES & GREATER.

A. The Company has also initiated water main replacement projects to address larger mains in this category. Post-test year projects in this account include the following:

- **Project No. 1009088 (Orangewood Avenue Water Main Replacement)**
- **Project No. 1009095 (Perryville Prison Line)**
- **Project No. 1005775 (Phoenix Interconnect—Paradise Valley)**

Q. PLEASE DESCRIBE PROJECT NOS. 1009095 AND PROJECT NO. 1009088 (PERRYVILLE PRISON LINE AND ORANGEWOOD AVENUE WATER MAIN REPLACEMENT) IN THE AGUA FRIA WATER DISTRICT.

A. The Agua Fria Water Comprehensive Planning Study was completed in April 2019 and identified a need for the prompt replacement of an existing 12-inch water main in Orangewood Ave between Agua Fria WP 5 and 187th Ave with a new 24-inch main. Current demands and distribution of supply include a restriction from the 12-inch line that impacted the ability to meet peak demand and fire flows to Agua Fria Zone 2. This project is the first part of a larger effort and involves the replacement of approximately 2,100 linear feet of 12-inch water main with 24-inch main between Agua Fria WP 5 and 175th Avenue. The Perryville Prison Line (also referred to as the Citrus Road Project) will extend to McDowell and half a mile east to the Perryville prison meter. Although these projects are not connected, they both involve the replacement with a larger pipe to meet peak hour and fire flow demands.

Q. PLEASE DESCRIBE PROJECT NO. 1005775 (PHOENIX INTERCONNECT) IN THE PARADISE VALLEY WATER DISTRICT.

A. EWAZ's Paradise Valley Water system supplies a demand of up to 16 MGD from seven (7) groundwater wells located along the eastern boundary of the service territory. All water produced from these wells is treated at the Paradise Valley Arsenic Removal Facility ("PVARF") also located on the eastern boundary of the service territory. The water treated at the PVARF is discharged into the distribution system through a single 36-inch pipeline. The service territory increases in elevation from the east to the west requiring water to run through seven (7) booster stations to ensure that adequate pressure is achieved to meet both regulatory and customer service levels.

The 36-inch pipeline at the PV Arsenic Facility on Cattletrack is a single Point of Entry into the distribution system and was a vulnerability to the system. Water service would have been disrupted due to a failure at the PVARF or in the 36-inch pipeline leaving a significant number of customers without water. This project mitigates that risk.

Prior to completion of this project, the Paradise Valley CAP surface water allocation could not be used because EWAZ had no means to treat that surface water. This project will allow EWAZ to utilize that allocation by making it possible to deliver water treated at an existing City of Phoenix water plant to EWAZ's Paradise Valley water distribution system. This solution will allow three million gallons per day (3 MGD) to be delivered to the EWAZ water system on the western end of the service territory building a level of redundancy that has not existed. The project will also address the single point of failure vulnerability and will add 3 MGD of supply in the form of a sustainable water source.

The scope of the project included connecting to the Phoenix system at 36th Street and Lincoln Drive; installing two (2) miles of 24-inch transmission pipeline in Lincoln Drive until it connects with an existing 16-inch pipeline at 52nd Place. This pipeline will bring the water into the existing booster station site. At the existing booster station site, the project also added additional pumping in order for the pressure from the transmission main to match that of the main zone pressure coming into the existing booster station site.

J NARUC ACCOUNT NO. 333000 SERVICES

Q. PLEASE DESCRIBE THE POST-TEST YEAR PROJECTS UNDER NARUC ACCOUNT NO. 333000 (SERVICES).

A. Projects that fall under this category are necessary for the replacement of water services and other related infrastructure between the water main and meter in order to reliably and effectively provide water to the customer. The total anticipated costs of existing services replacement is $3,307,840. These projects are budgeted and completed each year across all districts to keep the existing water distribution system operating reliably. Service lines do have leaks and those leaks often go undetected because they are a smaller flow of water than those of a main break. The cumulative effect of leaking service lines can result in significant water loss and can compromise service levels for those customers whose service line is leaking. These projects mitigate water loss that occurs with those service lines that have the more significant leaking and which tend to be older service lines.

K NARUC ACCOUNT NO. 334100 METERS

Q. PLEASE DESCRIBE THE POST-TEST YEAR PROJECTS UNDER NARUC ACCOUNT NO. 334100 (METERS).

A. Projects that fall under this category are necessary for the replacement of water meters and appurtenances necessary to reliably and effectively provide water to customers. Water meters typically have a useful life of 12 years and are programmed for replacement on that basis at a minimum. The total anticipated costs of existing meter replacements is $3,816,014. The projects in this category are budgeted and completed each year in each district to keep the existing water distribution system operating reliably and provide accurate customer water usage and accounting. Aged water meters run slow meaning more water passes through them than is being measured. This results in increased production expenses and increased NRW levels. Ensuring water is being measured accurately and that usage is billed accurately to the customers using that water is very important.

Q. DID EWAZ HAVE POST TEST YEAR PROJECTS IN OTHER NARUC ACCOUNTS?

A. Yes. The Company is also completing and has included post-test year projects in the following NARUC Accounts:

- 304200 - Structures & Improvements – Pumping;
- 304300 - Structures & Improvements – General;
- 304600 - Structures & Improvements – Offices;
- 310000 - Power Production Equipment;
- 311500 - Pumping Equipment Other;
- 311530 - Pumping Equipment Water Treatment;
- 335000 - Hydrants;
- 339200 - Other P/E-Supply;
- 346190 - Remote Control & Instrument
- 348000 - Other Tangible Plant

The projects in these categories are also important and necessary for the provision of safe and reliable water service and are already or will be in service by December 31, 2020.

L CORPORATE POST-TEST YEAR PLANT ADDITIONS

Q. ARE THERE ANY POST-TEST YEAR AMOUNTS INCLUDED IN THE INDIVIDUAL WATER DISTRICTS THAT HAVE BEEN ALLOCATED FROM A CORPORATE BUSINESS UNIT?

A. Yes, $439,531 of post-test year plant has been allocated to the water districts from Arizona Corporate (7A) project list totaling $625,986, and $145,691 of post-test year plant has been allocated to the water districts from EUSA's (6U) corporate project list totaling $236,802.

Q. HOW WERE CORPORATE POST-TEST YEAR PROJECTS FOR ARIZONA CORPORATE (7A) AND EUSA (6U) ALLOCATED?

A. Those projects were allocated to each district through the method described by Mr. Boizelle in his Direct Testimony (specifically, in Adjustment JPB-RB2).

Q. PLEASE AGAIN SUMMARIZE THE OVERALL POST-TEST YEAR PLANT REQUEST EWAZ IS MAKING IN THIS PROCEEDING.

A. For purposes of its direct filing, the Company is seeking inclusion of $56,784,484 of post-test year plant in rate base. The Company will update this request as projects are completed in its rebuttal filing. The $56,784,484 represents the entirety of post-test year projects scheduled to be in service and serving test-year water customers by December 31, 2020.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

EXHIBIT JWS-1

EPCOR Water Arizona
Tank Maintenance Plans - Water Districts
In Effect at 12/31/19

Line	District	Decision Number	Approval Date	Total Estimate	Program Years	Annual Expense	Program Period
1	**Agua Fria Water**	**73145**	**5/1/2012**	**$ 5,647,168**	**15**	**$ 376,478**	**2012 - 2026**
2							
3	**Anthem Water**	**72047**	**1/6/2011**	**Authorized a Deferral Mechanism**			
4							
5	**Havasu Water**	**73145**	**5/1/2012**	**763,200**	**10**	**76,320**	**2012 - 2021**
6							
7	**Mohave Water**	**73145; 75268**	**5/1/2012; 9/8/2015**	**3,669,120**	**15**	**244,608**	**2012 - 2026**
8							
9	**North Mohave Water**	Proposed		1,375,000	12	114,583	2017-2029
10							
11	**Paradise Valley Water**	**75268**	**9/8/2015**	**1,731,208**	**14**	**123,658**	**2016 - 2029**
12							
13	**Sun City Water**	**72047; 75268**	**1/6/2011; 9/8/2015**	**5,070,624**	**14**	**362,187**	**2010-2023**
14							
15	Sun City West Water	Proposed		1,817,130	8	227,141	2018-2025
16							
17	**Tubac Water**			**N/A**			
18							
19	Willow Valley Water	Proposed		Deferral Mechanism			
20							
21	**Chaparral Water**	**74568**	**6/20/2014**	**3,639,307**	**18**	**202,184**	**2015-2032**
22							
23	**Total**					**$ 1,727,159**	

EPCOR WATER ARIZONA
AGUA FRIA WATER DISTRICT
Tank Maintenance Plan
2012 - 2026

					Inspection Schedule														
SITE NAME	MATERIAL	TANK CAPACITY	APPROX. DIMENSIONS	YR BUILT	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
A.F. WP 1 TANK 1	CONCRETE	1,325,000	75' WIDE, 20' HIGH	2000												X			
A.F. WP 1 TANK 2	CONCRETE	1,325,000	75' WIDE, 20' HIGH	2000													X		
A.F. WP 2 TANK 1	STEEL	1,000,000	108' WIDE, 16' HIGH	1996	X														
A.F. WP 2 TANK 2	STEEL	1,000,000	108' WIDE, 16' HIGH	1996		X													
A.F. WP 3 TANK 1	STEEL	1,000,000	108' WIDE, 16' HIGH	1999				X											
A.F. WP 3 TANK 2	STEEL	1,000,000	108' WIDE, 16' HIGH	1999					X										
A.F. WP 4 TANK 1	STEEL	1,500,000	135' WIDE, 16' HIGH	1998			X												
A.F. WP 4 TANK 2	STEEL	2,000,000	156' WIDE, 16' 3" HIGH	2003						X									
A.F. WP 5	CONCRETE	1,250,000	127' WIDE, 19.6' HIGH, 71' DEEP	2004											X				
A.F. WP 8	STEEL	1,500,000	135' WIDE, 16' HIGH	2004								X							
A.F. WP 8	STEEL	2,200,000	168' Wide, 16' High	2008									X						
A.F. WP 9	STEEL	100,000	135' WIDE, 16' HIGH	2004							X								
A.F. WP 10 TANK 1	CONCRETE	1,735,000	124' WIDE, 20' HIGH	2005														X	
A.F. WP 10 TANK 2	CONCRETE	1,735,000	124' WIDE, 20' HIGH	2007															X
A.F. WP 14	STEEL	2,250,000	155'Wide, 16' High	2009										X					
A.F. WP 100	STEEL	1,250,000	125' WIDE, 18' HIGH	2003							X								
			COST BASIS per TCI REPORT		$ 305,500										Estimate 50% of the price per gallon for concrete tanks				
			PRICE PER GALLON		$ 0.306	0.306	$ 0.306	$ 0.306	$ 0.306	$ 0.306	$ 0.306	$ 0.306	$ 0.306	$ 0.306	$ 0.153	$ 0.153	$ 0.153	$ 0.153	$ 0.153
			ESTIMATED COST			$ 305,500	$ 458,250	$ 305,500	$ 305,500	$ 611,000	$ 412,425	$ 458,250	$ 672,100	$ 687,375	$ 190,938	$ 202,394	$ 202,394	$ 265,021	$ 265,021

TOTAL ESTIMATE PROGRAM COST	$ 5,647,168
AVERAGE 15-YEAR ANNUALIZED COST	$ 376,478

EPCOR Water Arizona
Chaparral City Water District
Tank Maintenance Plan

Chaparral System							Inspection Schedule								
TANK NAME	TANK LOCATION	Material	Capacity	Erection Date	Diameter	Shell Height	YR 2	YR 4	YR 6	YR 8	YR 10	YR 12	YR 14	YR 16	YR 18
Res. 1	Chaparral	steel	500,000	1972	65.0	18.0	X								
Res 2	Chaparral	steel	1,500,000	1972	92.0	30.0	X								
Res 3	Chaparral	steel	1,300,000	1974	96.0	24.0			X						
Res 4	Chaparral	steel	500,000	2005	52.0	31.0									X
Res 5	Chaparral	steel	1,200,000	1996	92.0	24.0					X				
Res 6	Chaparral	steel	1,200,000	1996	92.0	24.0						X			
Res 7	Chaparral	steel	1,200,000	1998	92.0	24.0							X		
Res 8	Chaparral	steel	500,000	2005	60.0	24.0								X	
Shea WTP	Chaparral	steel	3,500,000	1986	140.0	30.0				X					
Chaparral COST BASIS per Riley Industrial Services			$478,856												
PRICE PER GALLON			$0.32												
ESTIMATED COST							$638,475		$415,009	$1,117,331	$383,085	$383,085	$383,085	$159,619	$159,619
TOTAL ESTIMATE PROGRAM COST			$3,639,307												
AVERAGE 18-YEAR ANNUALIZED COST			$202,184												

EPCOR Water Arizona
Havasu Water District
Tank Maintenance Plan

Havasu Water

TANK NAME	TIC JOB #	TANK LOCATION	Material	Capacity	Erection Date	Diameter	Shell Height	Inspection Schedule 1 2012	2 2013	3 2014	4 2015	5 2016	6 2017	7 2018	8 2019	9 2020	10 2021
Havasu Booster #1		Lake Havasu City	steel	100,000	1965	27.0	24.0					X					
Havasu Booster #2		Lake Havasu City	steel	100,000	1990	30.0	32.0									X	
Havasu Booster #3		Lake Havasu City	steel	125,000	1991	30.0	24.0			X							
Havasu Booster #4 (No. 1)		Lake Havasu City	steel	250,000	1994	70.0	24.0										
Havasu Booster #4 (No. 2)		Lake Havasu City	steel	750,000	2003	52.0	32.0							X			

LAKE HAVASU COST BASIS per TCI REPORT	$144,000				
PRICE PER GALLON	$0.58				
ESTIMATED COST		$144,000	$72,000	$57,600	$432,000	$57,600
TOTAL ESTIMATE PROGRAM COST	$763,200					
AVERAGE 10-YEAR ANNUALIZED COST	$76,320					

EPCOR Water Arizona
Mohave Water District
Tank Maintenance Plan

Mohave Water District

TANK NAME	TANK LOCATION	Material	Capacity	Erection Date	Diameter	Shell Height	Inspection Schedule 1 2012	2 2013	3 2014	4 2015	5 2016	6 2017	7 2018	8 2019	9 2020	10 2021	11 2022	12 2023	13 2024	14 2025	15 2026
16-1 (No. 1)	Bullhead City	steel	1,000,000	1993	82.0	24.0								X							
16-1 (No. 2)	Bullhead City	steel	420,000	1992	56.0	24.0				X											
16-2 (No. 2)	Bullhead City	steel	1,000,000	1994	82.0	24.0									X						
24-1	Bullhead City	steel	1,000,000	1999	82.0	24.0												X			
Arizona Gateway	Bullhead City	steel	300,000	1995	72.0	24.0										X					
Big Bend Acres	Bullhead City	steel	120,000	1987	30.0	24.0							X								
Bullhead #4	Bullhead City	steel	120,000	1975 est	30.0	24.0		X													
Camp Mohave	Bullhead City	steel	250,000	1996	44.0	24.0											X				
Desert Foothills (No. 1)	Bullhead City	steel	500,000	1997	60.0	24.0													X		
Desert Foothills (No. 2)	Bullhead City	steel	500,000	2006	60.0	24.0														X	
Desert Glen	Bullhead City	steel	200,000	1984	65.0	24.0					X										
Lake Mohave Highlands	Bullhead City	steel	100,000	1972	27.0	24.0			X												
Laredo Village	Bullhead City	steel	500,000	1990	60.0	24.0	X														
Pegasus Ranch	Bullhead City	steel	120,000	1971	30.0	24.0		X													
Rancho Colorado	Bullhead City	steel	250,000	2006	44.0	24.0															X
Riverview Mall	Bullhead City	steel	40,000	1983		16.0					X										
Silver Creek	Bullhead City	steel	300,000	1984	50.0	32.0						X									

EAD CITY COST BASIS per TCI REPORT	$273,000																			
PRICE PER GALLON	$0.55																			
ESTIMATED COST		$273,000	$131,040	$54,600	$229,320	$131,040	$163,800	$65,520	$546,000	$546,000	$163,800	$136,500	546,000	$273,000	$273,000	$136,500				

TOTAL ESTIMATE PROGRAM COST	$3,669,120
AVERAGE 15-YEAR ANNUALIZED COST	$244,608

EPCOR Water Arizona
North Mohave Water District
Tank Maintenance Plan

North Mohave System

TANK NAME	TANK LOCATION	Material	Capacity	Diameter	Shell Height	Inspection Schedule 1 2021	2 2022	3 2023	4 2024	5 2025	6 2026	7 2027	8 2028	9 2029	10 2030	11 2031	12 2032
Site #4 Res. 1	North Mohave	steel	500,000	44'	24.0											X	
Site #1 Res 2	North Mohave	steel	500,000	44'	24'	X											
Site #1 Res 3	North Mohave	steel	300,000		24'			X									
Site #2 Res 4	North Mohave	steel	300,000		24'					X							
Site #2 Res 5	North Mohave	steel	300,000		24'						X						
Site #3 Res 6	North Mohave	steel	300,000		24'								X				
Site#3 Res 7	North Mohave	steel	300,000		24'									X			
HEAD CITY COST BASIS per TCI REPORT		$273,000				$275,000	$ -	$ 165,000	$ -	$ 165,000	$ 165,000	$ -	$ 165,000	$ 165,000	$ -	$ 275,000	$ -
PRICE PER GALLON		$0.55															
ESTIMATED COST																	
TOTAL ESTIMATE PROGRAM COST		$1,375,000															
AVERAGE 12-YEAR ANNUALIZED COST		$114,583															

EPCOR Water Arizona Inc.
Paradise Valley Water District
Tank Maintenance Plan

Paradise Valley Water District

TANK NAME	TANK LOCATION	Inspection Schedule													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
		Year Ending 8/31/2016	Year Ending 8/31/2017	Year Ending 8/31/2018	Year Ending 8/31/2019	Year Ending 8/31/2020	Year Ending 8/31/2021	Year Ending 8/31/2022	Year Ending 8/31/2023	Year Ending 8/31/2024	Year Ending 8/31/2025	Year Ending 8/31/2026	Year Ending 8/31/2027	Year Ending 8/31/2028	Year Ending 8/31/2029
60th Street Tank	Paradise Valley					x									
Clearwater Hills #1	Paradise Valley				x										
Clearwater Hills #2	Paradise Valley	x													
Clearwater Hills #3	Paradise Valley								x						
Club Estates Tank	Paradise Valley							x							
Country Club #1	Paradise Valley														x
Country Club #2	Paradise Valley										x				
PVARF #1	Paradise Valley														
PVARF #2	Paradise Valley														
Racquet Club Tank	Paradise Valley			x											
Stone Canyon Tank	Paradise Valley		x												
	Total Cost by Tank	$ 128,700	$ 99,990	$ 157,514	$ 151,514	$ 263,560	$ -	$ 102,580	$ 78,650	$ -	$ 331,300	$ -	$ -	$ -	$ 417,400

TOTAL ESTIMATE PROGRAM COST	$ 1,731,208
AVERAGE 14-YEAR ANNUALIZED COST	$ 123,658

EPCOR WATER ARIZONA
SUN CITY WATER DISTRICT
Tank Maintenance Plan
2010 - 2023

Engineer's Recommendations		Inspection Schedule													
Tank	Total	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
S.C. WP 1 TANK 1	$ 190,094							$ 188,294	$ 1,800						
S.C. WP 1 TANK 2	$ 195,046								$ 193,246	$ 1,800					
S.C. WP 2 TANK 1	$ 207,563									$ 205,763	$ 1,800				
S.C. WP 2 TANK 2	$ 213,736										$ 211,936	$ 1,800			
S.C. WP 2 TANK 3	$ 214,003											$ 212,203	$ 1,800		
S.C. WP 3 TANK 1	$ 303,951			$ 298,151	$ 1,800										$ 4,000
S.C. WP 3 TANK 2	$ 297,753				$ 295,953	$ 1,800									
S.C. WP 5 TANK 1	$ 450,709	$ 444,909	$ 1,800										$ 4,000		
S.C. WP 5 TANK 2	$ 487,396		$ 481,596	$ 1,800										$ 4,000	
S.C. WP 6 TANK 1	$ 628,850												$ 627,050	$ 1,800	
S.C. WP 6 TANK 2	$ 579,815													$ 578,015	$ 1,800
S.C. WP 8 TANK 1	$ 316,949					$ 315,149	$ 1,800								
S.C. WP 8 TANK 2	$ 315,895						$ 314,095	$ 1,800							
S.C. WP 9 TANK 1	$ 668,867														$ 668,867
Total	$ 5,070,624	$ 444,909	$ 483,396	$ 299,951	$ 297,753	$ 316,949	$ 315,895	$ 190,094	$ 195,046	$ 207,563	$ 213,736	$ 214,003	$ 632,850	$ 583,815	$ 674,667

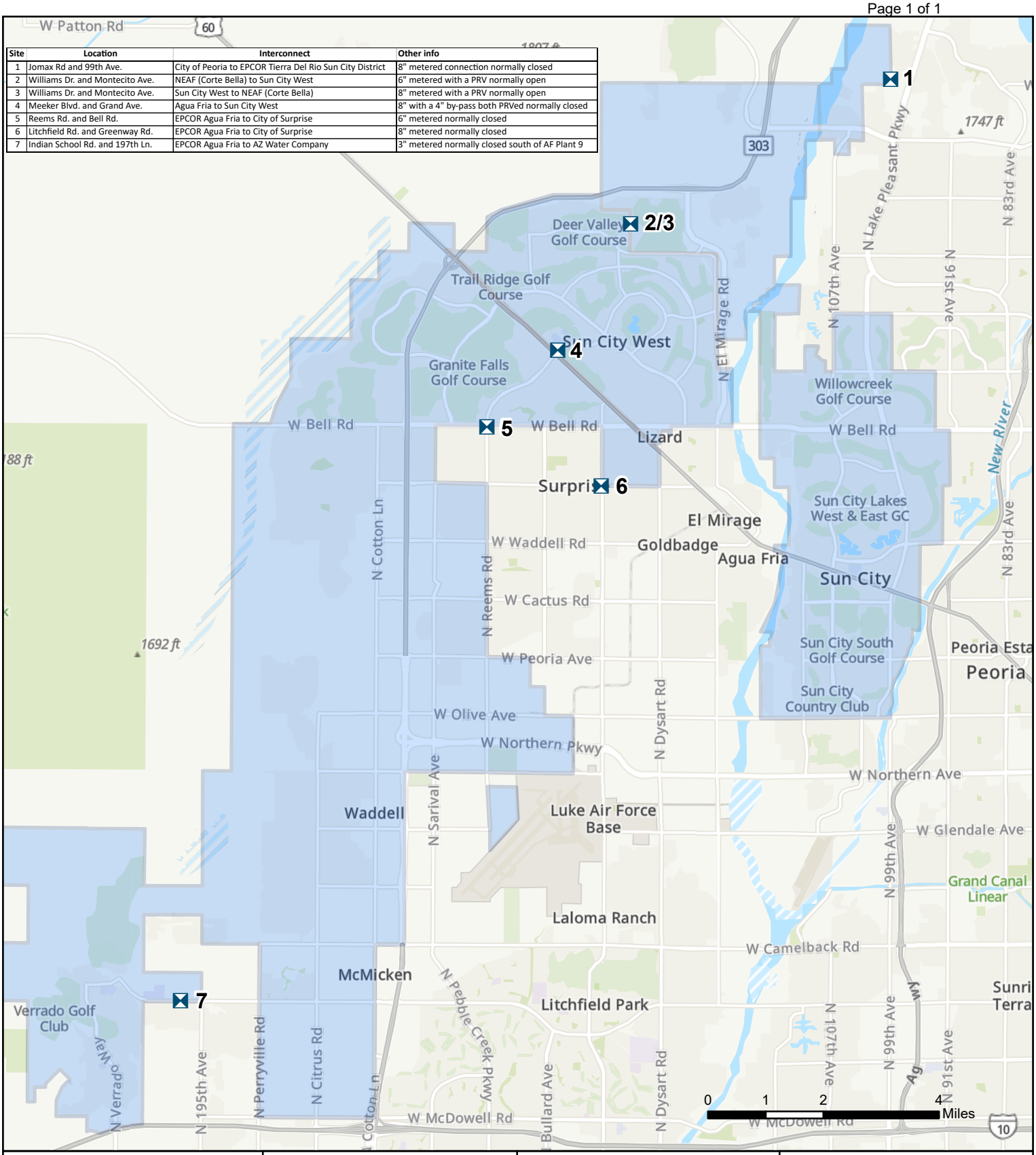
14-Year Average Annual $ 362,187

EPCOR WATER ARIZONA
SUN CITY WEST DISTRICT
Tank Maintenance Plan
2021-2028

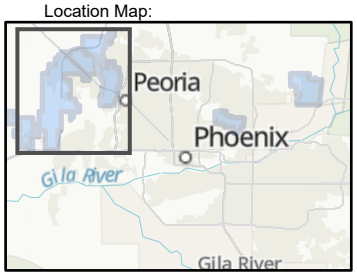
Engineer's Recommendations	Inspection Schedule								
Tank	**Total**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
SCW WP1 TANK 1	$ 502,850	$ 247,000	$ 35,000	$ -	$ -	$ 182,350	$ -	$ 38,500	$ -
SCW WP1 TANK 2	$ 464,080	$ -	$ -	$ -	$ 247,000	$ 35,000	$ 182,080	$ -	$ -
SCW WP2 TANK 1	$ 442,350	$ -	$ 187,000	$ 35,000	$ -	$ -	$ -	$ 185,350	$ 35,000
SCW WP2 TANK 2	$ 407,850	$ -	$ -	$ 187,000	$ 35,000	$ -	$ -	$ -	$ 185,850
Total	$ 1,817,130	$ 247,000	$ 222,000	$ 222,000	$ 282,000	$ 217,350	$ 182,080	$ 223,850	$ 220,850
Annual Average Over 8 Year Period	$ 227,141								

EXHIBIT JWS-2

Site	Location	Interconnect	Other info
1	Jomax Rd and 99th Ave.	City of Peoria to EPCOR Tierra Del Rio Sun City District	8" metered connection normally closed
2	Williams Dr. and Montecito Ave.	NEAF (Corte Bella) to Sun City West	6" metered with a PRV normally open
3	Williams Dr. and Montecito Ave.	Sun City West to NEAF (Corte Bella)	8" metered with a PRV normally open
4	Meeker Blvd. and Grand Ave.	Agua Fria to Sun City West	8" with a 4" by-pass both PRVed normally closed
5	Reems Rd. and Bell Rd.	EPCOR Agua Fria to City of Surprise	6" metered normally closed
6	Litchfield Rd. and Greenway Rd.	EPCOR Agua Fria to City of Surprise	8" metered normally closed
7	Indian School Rd. and 197th Ln.	EPCOR Agua Fria to AZ Water Company	3" metered normally closed south of AF Plant 9



Location Map:



Updated: June 1, 2020

File : G:\GIS\MXDs\
Interconnects_CentralDivision.mxd

Data Sources: EPCOR; ESRI

Legend:

System Interconnection

EPCOR-
Water Service Area

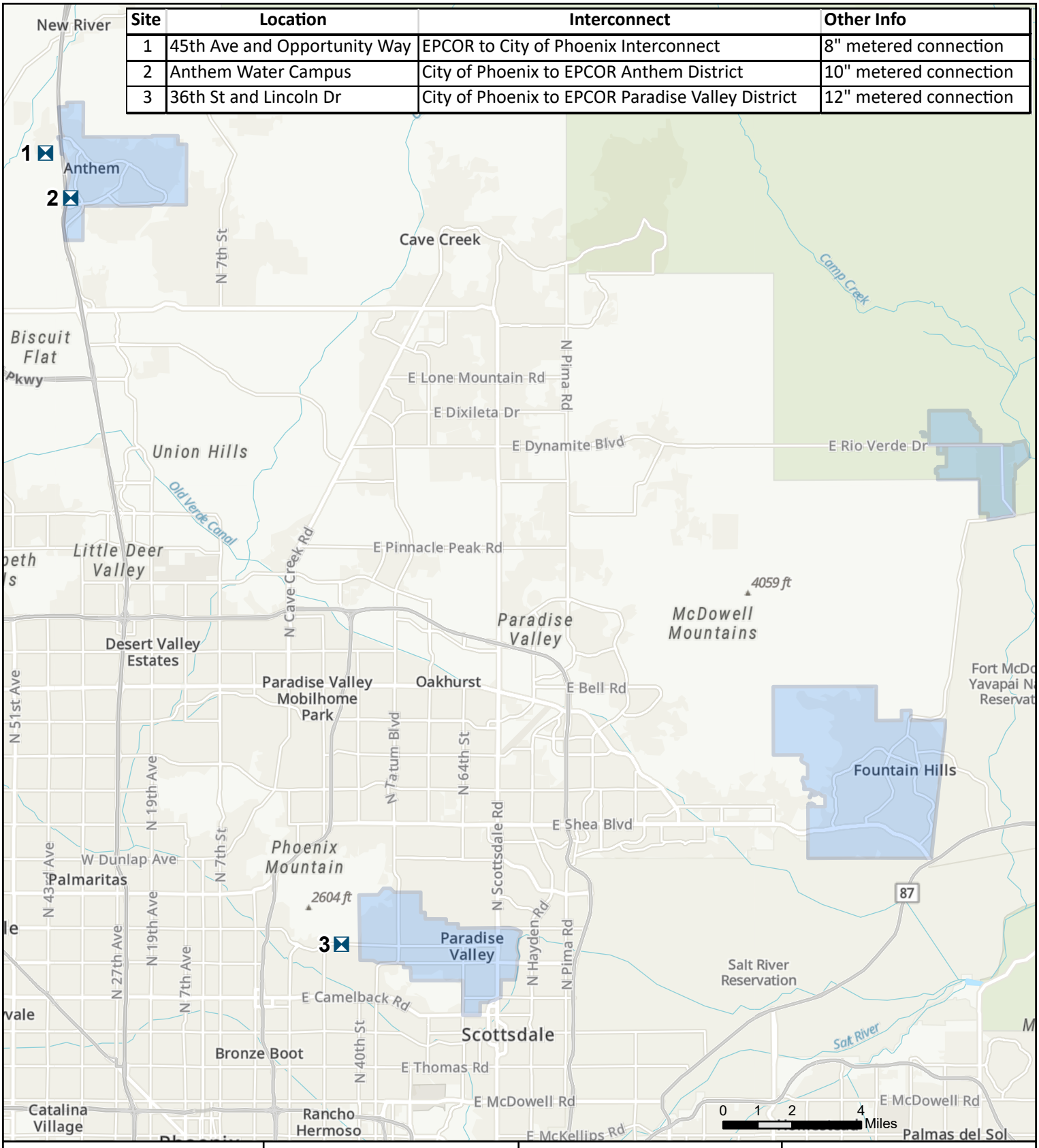
N

EPCOR
Interconnections
Central Division

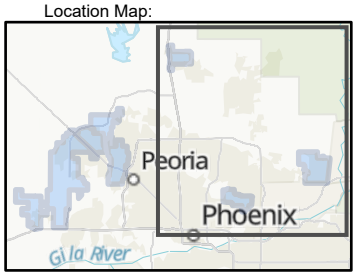
2355 W. Pinnacle Peak Rd.
Suite 300
Phoenix, AZ 85027

EXHIBIT JWS-3

Site	Location	Interconnect	Other Info
1	45th Ave and Opportunity Way	EPCOR to City of Phoenix Interconnect	8" metered connection
2	Anthem Water Campus	City of Phoenix to EPCOR Anthem District	10" metered connection
3	36th St and Lincoln Dr	City of Phoenix to EPCOR Paradise Valley District	12" metered connection



Location Map:



June 5, 2020

File : G:\GIS\MXDs\
Interconnects_EasternDivision.mxd

Data Sources: EPCOR; ESRI

Legend:

System Interconnection

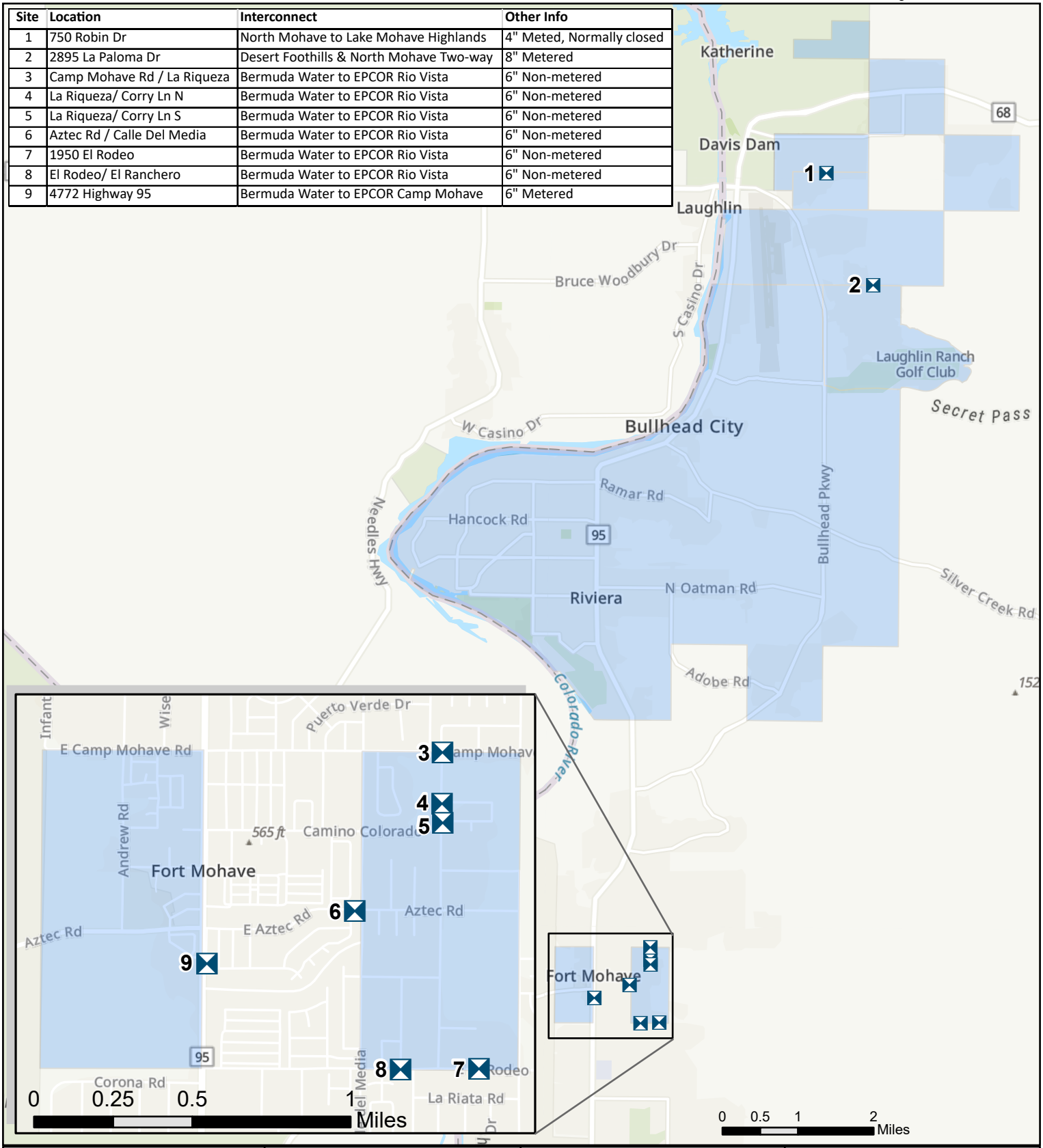
EPCOR-
Water Service Area

N

EPCOR Interconnections Eastern Division

2355 W. Pinnacle Peak Rd.
Suite 300
Phoenix, AZ 85027

Site	Location	Interconnect	Other Info
1	750 Robin Dr	North Mohave to Lake Mohave Highlands	4" Meted, Normally closed
2	2895 La Paloma Dr	Desert Foothills & North Mohave Two-way	8" Metered
3	Camp Mohave Rd / La Riqueza	Bermuda Water to EPCOR Rio Vista	6" Non-metered
4	La Riqueza/ Corry Ln N	Bermuda Water to EPCOR Rio Vista	6" Non-metered
5	La Riqueza/ Corry Ln S	Bermuda Water to EPCOR Rio Vista	6" Non-metered
6	Aztec Rd / Calle Del Media	Bermuda Water to EPCOR Rio Vista	6" Non-metered
7	1950 El Rodeo	Bermuda Water to EPCOR Rio Vista	6" Non-metered
8	El Rodeo/ El Ranchero	Bermuda Water to EPCOR Rio Vista	6" Non-metered
9	4772 Highway 95	Bermuda Water to EPCOR Camp Mohave	6" Metered



Location Map:

June 4, 2020

File : G:\GIS\MXDs\
Interconnects_Mohave.mxd

Data Sources: EPCOR; ESRI

Legend:

System Interconnection

EPCOR-
Water Service Area

N

EPCOR Interconnections Bullhead City Area

2355 W. Pinnacle Peak Rd.
Suite 300
Phoenix, AZ 85027

EPCOR Water Arizona Inc.
Docket No. WS-01303A-20-XXXX
Test Year Ended December 31, 2019

EPCOR Direct Testimony

Mr. Jon P. Boizelle

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

ROBERT "BOB" BURNS, Chairman
BOYD DUNN
SANDRA D. KENNEDY
JUSTIN OLSON
LEA MÁRQUEZ PETERSON

IN THE MATTER OF THE APPLICATION OF EPCOR WATER ARIZONA INC. FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND INCREASES/DECREASES IN ITS RATES AND CHARGES BASED THEREON FOR UTILITY SERVICE BY ITS AGUA FRIA, ANTHEM, CHAPARRAL, HAVASU, MOHAVE, NORTH MOHAVE, PARADISE VALLEY, SUN CITY, SUN CITY WEST, TUBAC, AND WILLOW VALLEY WATER DISTRICTS AND FOR CONSIDERATION OF CONSOLIDATION PROPOSALS	DOCKET NO: WS-01303A-20-____

DIRECT TESTIMONY
OF
JON P. BOIZELLE
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

DIRECT TESTIMONY
OF
JON P. BOIZELLE
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

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EXECUTIVE SUMMARY

Jon P. Boizelle testifies in support of EPCOR Water Arizona Inc.'s ("EWAZ" or "Company") Rate Application, which includes 1) stand-alone results for each district; and 2) consolidation scenarios 1 through 4 for alternative combinations of the Company's eleven water districts. Mr. Boizelle testifies to 2019 Test Year Plant Balances as well as *pro forma* adjustments for known and measurable changes to Test Year Rate Base, Revenues, and Operating Expenses.

Mr. Boizelle sponsors the following B Schedules on behalf of the Company:

Schedule B-1	Summary of Fair Value Rate Base
Schedule B-2	Original Cost Rate Base Pro Forma Adjustments
Schedule B-3	RCN Rate Base Pro Forma Adjustments
Schedule B-4	RCN Detail of Plant Accounts
Schedule B-5	Computation of Working Capital Allowance
Schedule B-6	Lead/Lag Study - Working Cash Requirement

Mr. Boizelle sponsors the following *pro forma* adjustments shown on the B Schedules:

JPB-RB 1	Plant and Accumulated Depreciation Balances
JPB-RB 2	Test Year CWIP and Post Test Year Plant Additions
JPB-RB 6	Remove Wastewater Vactor Truck
JPB-RB 8	Capital Lease
JPB-RB 9	Brooke Rate Base Adjustment
JPB-RB 10	Water System Acquisitions
JPB-RB 11	Remove Water Hauling Station

Mr. Boizelle also sponsors the following *pro forma* adjustment shown on the C Schedules:

JPB-IS 1	Adjust Property Taxes to Reflect Proposed Revenues
JPB-IS 4	Bad Debt Expense
JPB-IS 5	Annualization/Normalization of Revenues
JPB-IS 6	Removal of General Disallowable Items
JPB-IS 9	Postage Expense
JPB-IS 10	Customer Care and Billing Expense
JPB-IS 11	Chemical Expense

JPB-IS 12	CPI Adjustment
JPB-IS 13	Annualize Depreciation Expense
JPB-IS 14	Depreciation Expense on Post Test Year Plant
JPB-IS 17	Removal of Vactor Truck Depreciation
JPB-IS 18	Water System Acquisition Amortization
JPB-IS 19	Water Hauling Station Revenue and Expenses
JPB-IS 22	Brooke Revenue/Expense Adjustment
JPB-IS 23	Tank Maintenance
JPB-IS 24	Purchased Water Adjustment
JPB-IS 25	Power Cost Adjustment
JPB-IS 27	City of Phoenix Contract – Paradise Valley

Mr. Boizelle also sponsors for following E and H Schedules on behalf of the Company:

Schedule E-5	Detail of Plant in Service
Schedule H-5	Billing Determinants and Customer Annualization by Rate Schedule

Mr. Boizelle also outlines and provides justification for specific Company requests in relation to:

1. Modification of the Power Cost Adjustor Mechanism for Mohave, Paradise Valley, Sun City, and Tubac (as authorized in Decision No. 75268) and expansion of the mechanism to cover the Agua Fria, Anthem, Chaparral, Havasu, North Mohave, Sun City West, and Willow Valley Districts.
2. Approval of the Purchased Water Adjustor Mechanism for the Agua Fria Water District, in addition to continuing similar mechanisms authorized in prior decisions: Sun City and Sun City West Groundwater Savings Fee (Decision No. 62293), Paradise Valley and Chaparral Central Arizona Project Surcharges (Decision Nos. 61831 and 74568, respectively).

3. Continuation of the cost deferrals associated with the Deployed Service Member Credit Program and the Disabled Military Veterans Credit Program.

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND TELEPHONE NUMBER.

A. My name is Jon P. Boizelle. My business address is 2355 W. Pinnacle Peak Road, Suite 300, Phoenix, Arizona 85027. My business phone number is (623) 780-3780.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by EPCOR USA Inc. ("EUSA"), the owner of EPCOR Water Arizona Inc. ("EWAZ" or "Company"), as the Rates Manager.

Q. PLEASE DESCRIBE YOUR PRIMARY RESPONSIBILITIES FOR THE COMPANY.

A. My primary responsibilities with EUSA are to assist in the preparation of rate applications and other regulatory filings consistent with the applicable regulatory agency filing requirements in Arizona, New Mexico, and Texas.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE AND EDUCATION.

A. I joined EUSA in 2015 as a Rate Analyst and I am now employed as the Rates Manager. My professional experience includes more than four years of experience with public utility accounting and regulation; and another three years as an auditor of commercial and manufacturing companies, employee retirement plans, and casinos.

For the last seven years, I have worked in the water and wastewater industry in Arizona. Prior to my employment at EUSA, my primary areas of responsibility were full cycle accounting and reporting for the monthly, quarterly, and annual results of operations for water and wastewater operations, as well as annual

budgeting and flux analysis. With EUSA, my primary responsibilities have been preparing regulatory filings for changes in rates in Arizona and New Mexico, analysis of operating expenses, preparation of compliance reports, and preparation and analysis of customer billing determinants for regulatory filings, including rate cases.

I have a Masters of Accountancy from the University of Idaho and a Bachelor of Science in Accounting from Brigham Young University - Idaho. I am also a Certified Public Accountant, licensed in the state of Arizona. I have also attended the National Association of Regulatory Utility Commissioners ("NARUC") utility rate school as well as various other regulatory training courses.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS CASE?

A. The Company has been ordered to file a rate case by the Arizona Corporation Commission ("Commission") for its Agua Fria, Anthem, Chaparral, Havasu, Mohave, North Mohave, Paradise Valley, Sun City, Sun City West, Tubac, and Willow Valley water districts. My testimony supports some *pro forma* adjustments affecting rate base, revenues, and expenses. In addition, I provide justification for the Company's requested modifications to the Company's existing Power Cost Adjustor Mechanism ("PCAM") for Mohave, Paradise Valley, Sun City, and Tubac (as authorized in Decision No. 75268) and expansion of the mechanism to cover the Agua Fria, Anthem, Chaparral, Havasu, North Mohave, Sun City West, and Willow Valley Districts; as well as a Purchased Water Adjustor Mechanism ("PWAM") for

the Agua Fria Water District, in addition to continuing similar mechanisms authorized in prior decisions: Sun City and Sun City West Groundwater Savings Fee (Decision No. 62293), Paradise Valley and Chaparral Central Arizona Project Surcharges (Decision Nos. 61831 and 74568, respectively), and Tank Maintenance Programs. I also testify in favor of continuing the Company's Deployed Service Member and Disabled Service Member Credit Programs and associated cost deferrals.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. My testimony begins with certain schedules that I am sponsoring. These schedules are required by the Commission's standard filing requirements for financial information identified in the Arizona Administrative Code at Title 14, Chapter 2, Section 103 (A.A.C. R14-2-103). Next, I summarize the Company's calculated Rate Base for all of the districts in this Application followed by a discussion of the *pro forma* adjustments that I am sponsoring. My testimony concludes with the exhibits I am sponsoring.

Q. WHAT EXHIBITS ARE YOU SPONSORING?

A. I am sponsoring the following exhibits:

Exhibit JPB-1 Sun City West Water District - Tank Maintenance Program - Plan of Administration

Exhibit JPB-2 North Mohave Water District - Tank Maintenance Program - Plan of Administration

Exhibit JPB-3 Tank Maintenance Program - Sample Plan of Administration for All Other Water Districts.

Exhibit JPB-4 PCAM - Plan of Administration and Surcharge Calculation

Exhibit JPB-5 PWAM - Plan of Administration and Surcharge Calculation

Exhibit JPB-6 Impact of North Mohave Acquisition Premium

Q. DOES YOUR TESTIMONY INCORPORATE RECOMMENDATIONS OF OTHER COMPANY WITNESSES?

A. Yes. I have incorporated recommendations sponsored by Ms. Sheryl L. Hubbard, Mr. Jeffrey W. Stuck, and Ms. Sandra L. Skoubis as *pro forma* adjustments to test year revenues and expenses and rate base where applicable.

Q. HOW DOES YOUR TESTIMONY ADDRESS THE REGIONAL CONSOLIDATION SCENARIOS INCLUDED IN THIS APPLICATION?

A. Regional consolidation scenarios are combinations of the stand-alone districts. The schedules sponsored and adjustments discussed are presented on a stand-alone and regionally consolidated basis in this application. Schedules and adjustments on a regionally consolidated basis are the summation of the underlying stand-alone districts, as shown in the regionally consolidated schedules.

III. RECONSTRUCTION COST NEW RATE BASE ("RCN")

Q. PLEASE BRIEFLY EXPLAIN RCN.

A. The Commission has defined RCN at A.A.C. R14-2-103(A)(3)(n) as:

> An amount consisting of the depreciated reconstruction cost new of the property (exclusive of contributions and/or advances in aid of construction) at the end of the test year, used and useful, plus a proper allowance for working capital and including all applicable pro forma adjustments. Contributions and advances in aid of construction, if recorded in the accounts of the public service corporation, shall be increased to a reconstruction new basis.

RCN is the estimated cost of constructing the utility's property at today's cost levels; this is typically done through a trending study or through an engineering study using current cost estimates. RCN less depreciation ("RCND") typically

refers to the net utility plant in service ("UPIS") after deducting accumulated depreciation ("A/D") and amortization.

Q. PLEASE EXPLAIN THE BASIS FOR YOUR DETERMINATION OF RCN.

A. A trended original cost study was conducted as the means of determining RCN for each district. The RCN is summarized on Schedule B-4 for each district.

Q. ARE TRENDED ORIGINAL COST STUDIES AN ACCEPTED APPROACH TO DETERMINING RCN?

A. Yes. Valuation experts have used trended original cost studies in this manner for many years. It is a cost effective and reasonable approach to the determination of RCN. The Commission has accepted these studies in a number of cases.[1]

Q. HOW HAS THE COMMISSION USED THE RCN IN THE DETERMINATION OF A COMPANY'S FAIR VALUE RATE BASE ("FVRB")?

A. The Commission has historically used a 50/50 weighting of Original Cost Rate Base ("OCRB") and RCN. To alleviate any contention surrounding the method used to determine each district's FVRB, the Company has chosen to use the method that the Commission has approved historically.

Q. PLEASE DESCRIBE THE TRENDED ORIGINAL COST STUDY.

A. The trended original cost study was prepared to establish a measure of the cost to reconstruct UPIS at current 2019 cost levels. In a trended original cost study, trend factors, as developed from cost indexes, are applied to the original cost by

[1] *See, e.g.,* Citizens Communications, Inc., Decision No. 60172 (May 7, 1997); Paradise Valley Water Company, Decision No. 60220 (May 29, 1997); Chaparral City Water Company, Decision No. 68176 (September 30, 2005); Chaparral City Water Company, Decision No. 71308 (October 21, 2009); Tucson Electric Power Company, Decision No. 73912 (June 27, 2013); UNS Gas, Inc., Decision No. 73142 (May 1, 2012); and EPCOR Water Arizona Inc. Decision No. 76162 (June 28, 2017).

installation year of the assets being studied. Using the Company's continuing property records, which include the district (or business unit), the plant account, description, and date of installation, and original cost for each asset, the December 31, 2019 current cost was determined by dividing the 2019 cost index by the cost index for the year of installation of the asset. For example, the current cost for an asset placed in service in 2011 in Account 335, Hydrants is computed as follows:

	Example
Original Cost of Hydrants Placed In Service in 2011	$ 10,000
Cost index for 2019 Test Year	1002
÷ Cost Index for 2011 Year Placed in Service	672
RCN Factor	1.49
Original Cost X RCN Factor	$ 14,900

For most accounts, the Handy-Whitman Index of Public Utility Construction Costs ("Handy Whitman Index") for the Plateau Region has been employed – specifically, the index numbers released by Handy-Whitman in Bulletin No. 190 for July 1, 2019. For certain plant accounts, which do not have a like-kind Handy-Whitman index, such as Accounts 300, 304, 310, 336, 339, 340, 341, 342, 343, 345, 346, 347 and 348, a consumer price index ("CPI") factor was calculated based on the year-over-year increases on all plant classifications in the Handy-Whitman Index.

Q. WHAT IS THE HANDY-WHITMAN INDEX?

A. The Handy Whitman Index is an index of public utility construction costs that has been published continuously since 1924 by Whitman, Requardt and Associates, LLP of Baltimore, Maryland. The Handy-Whitman Index is a well-recognized, widely used and generally-accepted method for measuring differences in property values for insurance and other purposes, including the valuation of public utility

property for rate case purposes. It is used and accepted at the Commission. The same methodology was accepted by all parties who provided testimony pertaining to revenue requirement analysis in the Company's last wastewater rate case (Docket No. WS-01303A-16-0145) and the last water rate application process (Docket No. 01303A-17-0257).

The Handy-Whitman Index is comprised of index numbers for various accounts prescribed by the NARUC's Uniform System of Accounts and for six geographical divisions of the country, including the Plateau Division, in which Arizona is located. These index numbers result from a comparison of the current prices of materials, labor, and equipment to prices in a base year. Index numbers are determined for each year as of January 1 and July 1 with publication occurring approximately five months thereafter. The index numbers are used to determine cost trend factors, which are then applied to known original costs of "like-kind" plant and property to determine the fluctuation in cost between the date of original installation and the date of valuation.

Q. HOW WAS THE CURRENT VALUE OF ACCUMULATED DEPRECIATION DETERMINED?

A. For each asset, the A/D was determined using the RCN cost, the number of years in service, and the approved depreciation rates. The actual in-service date was used.

Q. DID YOU PERFORM AN RCN ADJUSTMENT FOR WORKING CAPITAL?

A. No, because the working capital component of rate base is based on a 13-month average of inventory, prepaid expenses, and the monthly cash lead/lag for operating

expenses and revenues. An adjustment to calculate approximately one year of increases to those categories was considered immaterial for purposes of this filing.

Q. HOW WILL YOU DISCUSS EACH RCN ADJUSTMENT?

A. For each Rate Base adjustment, there is a corresponding RCN adjustment. The adjustments will be discussed concurrently in the testimony beginning in Part V below.

IV. SPONSORED SCHEDULES

"B" SCHEDULES – FAIR VALUE RATE BASE

Q. PLEASE IDENTIFY THE SPECIFIC "B" SCHEDULES YOU ARE SPONSORING.

A. I am sponsoring the following "B" schedules for the Company:

1. Schedule B-1: Summary of Fair Value Rate Base
2. Schedule B-2: Original Cost Rate Base *Pro Forma* Adjustments
3. Schedule B-3: RCN Rate Base *Pro Forma* Adjustments
4. Schedule B-4: RCN Detail of Plant Accounts
5. Schedule B-5: Computation of Working Capital Allowance
6. Schedule B-6: Lead/Lag Study- Working Cash Requirement

1 Schedule B-1: Summary of Fair Value Rate Base

Q. PLEASE EXPLAIN SCHEDULE B-1.

A. Schedule B-1 titled "Summary of Fair Value Rate Base" sets forth the Summary of Fair Value Rate Base for each district as of the end of the test year ending December 31, 2019. Rate Base represents the investor-supplied plant facilities and other investments required to provide utility service to customers. The components typically recognized in the calculation of rate base are UPIS, A/D, customer advances in aid of construction ("AIAC"), contributions in aid of construction

("CIAC") net of accumulated amortizations, customer deposits, accumulated deferred income taxes ("ADIT"), investment tax credits (when applicable), and working capital. Other items that may be considered in the calculation of rate base on a case-by-case basis include regulatory assets (also referred to as deferred debits), regulatory liabilities, acquisition adjustments and construction work in progress.

Net Plant, UPIS less associated A/D, is generally the largest component of rate base. Rate base is computed by offsetting Net Plant by AIAC, CIAC-Net of Accumulated Amortizations, and ADIT. The accumulated balance of AIAC is shown on line 12 of Schedule B-1. Line 15 of Schedule B-1 shows the CIAC, net of applicable amortizations, for EWAZ. Line 18 shows the amount of Customer Deposits at the end of the test year and line 19 of the Schedule shows the ADIT as of the end of the test year.

Regulatory Liabilities shown on line 21 include regulatory liabilities previously authorized by the Commission.

Deferred Debits is comprised of regulatory assets previously authorized by the Commission as well as regulatory assets for which EWAZ is requesting Commission approval. This is shown on line 24.

The Working Capital Allowance that is shown on line 25 of Schedule B-1 is supported by calculations on Schedule B-5 and will be discussed later in this testimony. For ratemaking purposes, a working capital allowance is developed to adjust rate base to reflect the additional investment required for on-going utility operations over and above the amount reflected in Net Plant.

Q. DOES SCHEDULE B-1 INCLUDE ANY ACQUISITION ADJUSTMENTS OR PREMIUMS?

A. The Utility Plant Acquisition Adjustment paid by EUSA when it purchased Arizona American Water Company ("AZAM")[2] from American Water has not been included in the calculation of Rate Base for purposes of this proceeding. Line 26 of Schedule B-1 reflects this exclusion. However, the Willow Valley Water District includes a *pro forma* adjustment to include the acquisition premiums associated with the purchase from Global Water Resources, Inc. by EWAZ. The North Mohave and Mohave districts include *pro forma* adjustments to include the acquisition premium paid and a proposed acquisition premium associated with the purchase of the assets from North Mohave Valley Corporation as discussed in Adjustment JPB-RB10.

In addition to the original cost of rate base, the Company conducted a study to calculate an RCND valuation of Rate Base and has included the results in Schedule B-1. Schedules B-3 and B-4 support the values presented for RCND Rate Base in Schedule B-1.

Table 1 below is a summary of the rate base values for the Company's proposed OCRB and the RCND Rate Base (used in calculating the FVRB) for each district in this proceeding. The FVRB is calculated by averaging the OCRB and the RCND Rate Base, resulting in total FVRB of $528,080,678.

Table 1. OCRB, RCND, and FVRB

Water District	OCRB	RCND	FVRB
Agua Fria Water	$ 136,784,083	$ 180,135,897	$ 158,459,990
Anthem	55,711,728	87,695,536	71,703,632
Chaparral	40,445,654	64,990,341	52,717,997
Havasu	8,159,613	13,034,302	10,596,957
Mohave	35,387,174	51,265,959	43,326,567
North Mohave	5,184,671	5,764,709	5,474,690

[2] EUSA renamed AZAM to EWAZ shortly after acquiring the Company.

Paradise Valley	51,786,228	75,968,423	63,877,326
Sun City	59,960,901	79,324,763	69,642,832
Sun City West	35,432,907	57,008,302	46,220,605
Tubac	1,108,729	1,756,404	1,432,566
Willow Valley	3,946,729	5,308,303	4,627,516
EPCOR Arizona	**$ 433,908,417**	**$ 622,252,939**	**$ 528,080,678**

2 Schedule B-2: Original Cost Rate Base Pro Forma Adjustments

Q. PLEASE EXPLAIN SCHEDULE B-2.

A. Schedule B-2 titled "Original Cost Rate Base Pro Forma Adjustments" details the *pro forma* adjustments identified and proposed to adjust the historical test year-end plant, accumulated depreciation, AIAC, CIAC, and regulatory deferrals. Each *pro forma* adjustment is designed to include all investments required to provide safe and reliable service to historical test year customers at the time when the rates resulting from this application become effective. Each adjustment is described separately in Section VI of my testimony.

3 Schedule B-3: RCN Rate Base *Pro Forma* Adjustments

Q. PLEASE EXPLAIN SCHEDULE B-3.

A. Schedule B-3 shows the development of the RCN Rate Base proposed by the Company. Schedule B-3 starts with the adjusted UPIS, A/D, AIAC, CIAC, ADIT, Customer Deposits, and Deferred Debits/Credits at the end of the test year, as adjusted for an RCN basis. The RCN basis for UPIS and A/D are based on the specific RCN calculations by asset as summarized on Schedule B-4, as shown in Table 2 Part 1 and Table 2 Part 2 below. The RCN basis for UPIS and A/D are included as a component in the RCND balances in Table 1 above. The test year balances for AIAC, CIAC, and Deferred Income Taxes and Credits are adjusted to an RCN basis using an RCN factor.

In order to adjust components of Rate Base associated with UPIS but that cannot be specifically traced to specific property assets, an RCN factor is used. Each of the Company's water districts have a unique RCN factor that is calculated as the ratio of UPIS balances to the RCN Net Utility Plant in Service. Adjusting AIAC, CIAC, and Deferred Income Taxes and Credits using the RCN factor is appropriate because these elements of rate base are associated with the underlying plant that has been adjusted to an RCN basis using the Handy Whitman Index. Other non-plant related elements of rate base, such as customer deposits or working capital, are not adjusted using the RCN factor.

The pro forma adjustments shown on Schedule B-2, labeled as ADJ JPB-RB2 through ADJ SLS-RB12, are then added to the adjusted plant test year balances detailed on Schedule B-3 to determine the RCN adjusted test year rate base. These adjustments require no RCN adjustment because their values would be the same as original cost.

Table 2 Part 1. RCN Plant Balances (excludes Corporate Plant)

Water District	RCN UPIS Per Rollforward	Original Cost UPIS	Adjustment
Agua Fria	$ 637,783,589	$ 441,488,708	$ 196,294,880
Anthem	188,516,910	102,530,942	85,985,968
Chaparral	176,036,837	91,062,155	84,974,682
Havasu	26,971,631	16,837,907	10,133,724
Mohave	112,174,949	65,360,382	46,814,567
North Mohave	21,595,705	13,466,450	8,129,255
Paradise Valley	171,872,485	86,118,604	85,753,881
Sun City	245,359,652	118,426,037	126,933,614
Sun City West	137,262,139	64,569,814	72,692,325
Tubac	14,035,299	6,938,300	7,096,998
Willow Valley	10,039,985	6,178,381	3,861,604
Total	**$ 1,741,649,180**	**$ 1,012,977,681**	**$ 728,671,499**

Table 2 Part 2. RCN Accumulated Depreciation Balances

Water District	RCN A/D	Original Cost UPIS A/D	Adjustment
Agua Fria	$ 200,646,144	$ 119,808,058	$ 80,838,086
Anthem	81,318,911	36,247,856	45,071,055
Chaparral	87,925,145	37,808,702	50,116,443
Havasu	3,652,438	4,086,854	(434,416)
Mohave	47,731,828	22,388,833	25,342,995
North Mohave	12,168,227	5,144,167	7,024,060
Paradise Valley	93,287,149	36,862,124	56,425,024
Sun City	137,858,280	40,279,767	97,578,513
Sun City West	76,806,365	27,782,176	49,024,189
Tubac	7,837,929	3,097,227	4,740,703
Willow Valley	5,735,730	3,421,407	2,314,322
Total	**$ 754,968,147**	**$ 336,927,172**	**$ 418,040,975**

4 Schedule B-4: RCN Detail of Plant Accounts

Q. PLEASE EXPLAIN SCHEDULE B-4.

A. Schedule B-4 titled "RCN Detail of Plant Accounts" provides details of RCN plant, A/D and RCND at December 31, 2019 by NARUC account. The schedule also presents Arizona corporate plant and EUSA corporate plant segregated by NARUC account, which is then allocated to the Company's districts.

5 Schedule B-5: Computation of Working Capital Allowance

Q. PLEASE EXPLAIN SCHEDULE B-5.

A. Schedule B-5 provides the Computation of Working Capital Allowance. Working capital is a measure of funding requirements of daily operating expenditures and other non-plant investments that are necessary to sustain ongoing operations of the utility. This measurement is designed to identify the average ongoing funding

requirements of investors for the test year. Working Capital consists of Cash Working Capital derived from a Lead/Lag study, as well as 13-month averages applicable to Required Bank Balances, Inventories, and Prepayments on the Company's Balance Sheet. 13-month averages of the required bank balances, inventories - both plant materials and chemicals, and the prepayment balances from the balance sheet have been calculated and are reflected on Schedule B-5.

Q. PLEASE DISCUSS THE MATERIALS AND SUPPLIES INVENTORY COMPONENT OF THE WORKING CAPITAL REQUIREMENT.

A. Theoretically, materials and supplies are included as a component of working capital to provide a return on the investor's capital required to maintain a supply of materials necessary to carry on day-to-day operations and maintenance activities. The measurement of the materials and supplies inventory for working capital purposes is computed using an average of thirteen monthly balances, which reduces distortions that may be caused when, and if, the inventory balances are volatile or experience cyclical highs and lows.

Q. PLEASE DISCUSS THE PREPAYMENTS COMPONENT OF THE WORKING CAPITAL REQUIREMENT.

A. Prepayments are included as a component of working capital to recognize an investment of funds made by a company. Prepayments represent payments of expenses made in advance of the period to which they apply. A 13-month average balance is used to quantify the working capital allowance due to investments in prepayments to be added to the Company's rate base.

Q. PLEASE DISCUSS THE CASH WORKING CAPITAL COMPONENT OF THE WORKING CAPITAL REQUIREMENT.

A. Cash working capital should represent the average amount of capital provided by investors, over and above the investment in plant and other rate base items, to finance the cost of service during the time lag that exists between the time that service is provided and the collection of revenues. In conjunction with the other components of rate base, the cash working capital component measures the amount of investor-supplied capital required to provide service. There are several acceptable methods for computing the cash working capital component, but the Commission Staff has adopted the use of the lead/lag methodology for determining cash working capital for Class A water utilities in this jurisdiction.

6 Schedule B-6: Lead/Lag Study – Cash Working Capital Requirement

Q. PLEASE EXPLAIN SCHEDULE B-6.

A. Schedule B-6 titled "Lead/Lag Study – Cash Working Capital Requirement" details the calculation of the investor-provided working cash component of the working capital allowance. To compute the working cash component, it is necessary to measure the time lag between services rendered and the receipt of revenues for those services. This measurement, referred to as Revenue Lag Days, reflects a provision of working capital by investors and is shown in Column (C) of Schedule B-6. It is also necessary to measure the time lag between the incurrence of expenses and the payment of those expenses by the Company referred to as the Expense Lag Days (Column (D) of Schedule B-6), which offsets the revenue lag. This is referred to as the Net Lag Days and is summarized by expense category in Column (E) of Schedule B-6. When the Revenue Lag Days exceed the Expense Lag Days, there is an implicit investment of working capital by investors. If the inverse is true, there is a net provision of working capital by customers. The cash working capital

calculation in this case is based on the adjusted test year results multiplied by the lead/lag factors derived from the exercise discussed above. This is true except for customer accounting, property taxes, and income tax expenses. For these, the level of expense at the proposed rate levels has been used to account for changes that are impacted by changes in revenue. The Company relied on a recently conducted Lead/Lag study to derive revenue and expense lag factors for all categories.

"E" SCHEDULES – FINANCIAL STATEMENTS AND STATISTICAL DATA

Q. PLEASE IDENTIFY THE SPECIFIC "E" SCHEDULE YOU ARE SPONSORING.

A. I am sponsoring Schedule E-5 in this proceeding:

7 **Schedule E-5: Detail of Plant in Service**

Q. PLEASE DESCRIBE SCHEDULE E-5.

A. Schedule E-5 titled "Detail of Plant in Service" provides details of plant account activity during 2019 summarized by NARUC account. The Schedule also presents Arizona and EUSA corporate plant activity by NARUC account, which is allocated to the Company's districts. *Pro forma* adjustments to Plant in Service are also shown on Schedule E-5. Schedule E-5 also shows the adjustment to the Plant in Service amounts reflected on Schedule B-2.

V. RATE BASE *PRO FORMA* ADJUSTMENTS.

Q. WHAT *PRO FORMA* RATE BASE ADJUSTMENTS IS EWAZ PROPOSING TO THE HISTORICAL TEST YEAR?

A. EWAZ has identified and listed below known and measurable changes to the historical test-year rate base components (UPIS, A/D, AIAC, CIAC, ADIT, Regulatory Assets, and Acquisition Premiums). I am sponsoring the adjustments

identified by JPB-RBXX where XX represents a *pro forma* adjustment number, and Company witness Ms. Sandra L. Skoubis is sponsoring the adjustments numbered SLS-RBXX where XX is a *pro forma* adjustment number.

JPB-RB1	Plant and Accumulated Depreciation Balances
JPB-RB2	Test Year CWIP and Post Test Year Plant Additions
SLS-RB3	AIAC Refunds Paid Post Test Year
SLS-RB4	Removal of CIAC not in Plant in Service
SLS-RB5	Remove Plant Acquisition Adjustment
JPB-RB6	Remove Wastewater Vactor Truck
SLS-RB7	Regulatory Assets and Liabilities
JPB-RB8	Capital Lease
JPB-RB9	Brooke Rate Base Adjustment
JPB-RB10	Water System Acquisitions
JPB-RB11	Remove Water Hauling Station Plant
SLS-RB12	ADIT Balance

A. TEST YEAR PLANT & ACCUMULATED DEPRECIATION BALANCES (JPB-RB1)

Q. PLEASE EXPLAIN ADJUSTMENT FOR TEST YEAR PLANT AND ACCUMULATED DEPRECATION (JPB-RB1).

A. Adjustment JPB-RB1 reconciles and adjusts asset and A/D balances on the general ledger to those found on the Company's plant rollforwards for each water district. Included in this adjustment is an adjustment to reconcile the Arizona Corporate and EUSA allocation of plant. The components of this adjustment are shown below in Parts 1 and 2 of Tables 3, 4, and 5.

Table 3 Part 1. Plant Balances

Water District	Gross UPIS Per Rollforward	Gross UPIS Per GL	Adjustment
Agua Fria	$ 441,488,708	$ 441,617,434	$ (128,726)
Anthem	102,530,942	100,331,456	2,199,486
Chaparral	91,062,155	91,328,178	(266,023)
Havasu	16,837,907	16,854,517	(16,610)
Mohave	65,360,382	65,590,570	(230,188)
North Mohave	13,466,450	13,555,242	(88,792)
Paradise Valley	86,118,604	86,271,806	(153,202)
Sun City	118,426,037	119,440,222	(1,014,185)
Sun City West	64,569,814	64,783,790	(213,976)
Tubac	6,938,300	6,938,301	(1)
Willow Valley	6,178,381	6,219,561	(41,180)
Total	**$ 1,012,977,681**	**$ 1,012,931,077**	**$ 46,604**

Table 3 Part 2 Accumulated Depreciation Balances

Water District	Accumulated Depreciation Per Rollforward	Accumulated Depreciation Per GL	Adjustment	Part 1 less Part 2 Net Incr/(Decr) to Rate Base
Agua Fria	$119,808,058	$119,824,387	$(16,329)	$(112,397)
Anthem	36,247,856	36,380,030	(132,174)	2,331,660
Chaparral	37,808,702	37,563,273	245,429	(511,452)
Havasu	4,086,854	4,242,896	(156,042)	139,432
Mohave	22,388,833	23,336,195	(947,362)	717,174
North Mohave	5,144,167	5,411,125	(266,957)	178,165
Paradise Valley	36,862,124	34,989,602	1,872,522	(2,025,724)
Sun City	40,279,767	42,770,869	(2,491,102)	1,476,917
Sun City West	27,782,176	28,219,821	(437,645)	(39,881,716)
Tubac	3,097,227	3,197,029	(99,802)	99,802

Willow Valley	3,421,407	3,299,452	121,956		(163,136)
Total	**$336,927,172**	**$339,234,678**	**$(2,307,507)**		**$2,354,109**

Table 4 Part 1. Plant Balances – EWAZ Allocated

Water District	GMC Factor	Gross UPIS Per Rollforward	Gross UPIS Per GL	Adjustment
Arizona Plant		**$ 13,733,904**		
Agua Fria	24.54%	3,369,790	3,369,603	187
Anthem	4.51%	619,942	619,907	34
Chaparral	6.98%	959,073	959,020	53
Havasu	0.95%	130,398	130,391	7
Mohave	8.32%	1,142,979	1,142,915	64
North Mohave	1.06%	146,079	146,071	8
Paradise Valley	2.52%	346,766	346,746	19
Sun City	12.53%	1,720,624	1,720,528	96
Sun City West	7.70%	1,057,973	1,057,914	59
Tubac	0.31%	42,985	42,982	2
Willow Valley	0.78%	106,533	106,527	6
Total	**70.21%**	**$ 9,643,141**	**$ 9,642,605**	**$ 536**

Table 4 Part 2 Accumulated Depreciation Balances – EWAZ Allocated

Water District	GMC Factor	Accumulated Depreciation Per Rollforward	Accumulated Depreciation Per GL	Adjustment
Arizona Plant		**$ 4,589,186**		
Agua Fria	24.54%	1,126,016	1,334,705	(208,689)
Anthem	4.51%	207,154	245,546	(38,393)
Chaparral	6.98%	320,474	379,869	(59,395)
Havasu	0.95%	43,573	51,648	(8,075)
Mohave	8.32%	381,927	452,711	(70,784)
North Mohave	1.06%	48,812	57,859	(9,047)
Paradise Valley	2.52%	115,872	137,347	(21,475)
Sun City	12.53%	574,947	681,504	(106,557)
Sun City West	7.70%	353,522	419,041	(65,520)
Tubac	0.31%	14,363	17,025	(2,662)
Willow Valley	0.78%	35,598	42,196	(6,598)
Total	**70.21%**	**$ 3,222,257**	**$ 3,819,451**	**$ (597,194)**

Table 5 Part 1. Plant Balances – EUSA Allocated

Water District	GMC Factor	U.S. GMC Factor	Gross UPIS Per Rollforward*
EUSA Plant		87.62%	**$ 7,642,351**
Agua Fria	24.54%	21.50%	1,643,084
Anthem	4.51%	3.96%	302,279
Chaparral	6.98%	6.12%	467,637
Havasu	0.95%	0.83%	63,581
Mohave	8.32%	7.29%	557,308
North Mohave	1.06%	0.93%	71,227
Paradise Valley	2.52%	2.21%	169,080
Sun City	12.53%	10.98%	838,963
Sun City West	7.70%	6.75%	515,859
Tubac	0.31%	0.27%	20,959
Willow Valley	0.78%	0.68%	51,945
EPCOR Arizona	**70.21%**	**61.52%**	**$ 4,701,922**

*EUSA Plant is not included in schedule E1 and is included through this adjustment.

Table 5 Part 2 Accumulated Depreciation Balances – EUSA Allocated

Water District	GMC Factor	U.S. GMC Factor	Accumulated Depreciation Per Rollforward*
EUSA Plant		87.62%	**$3,809,774**
Agua Fria	24.54%	21.50%	819,091
Anthem	4.51%	3.96%	150,688
Chaparral	6.98%	6.12%	233,121
Havasu	0.95%	0.83%	31,696
Mohave	8.32%	7.29%	277,822
North Mohave	1.06%	0.93%	35,507
Paradise Valley	2.52%	2.21%	84,288
Sun City	12.53%	10.98%	418,230
Sun City West	7.70%	6.75%	257,160
Tubac	0.31%	0.27%	10,448
Willow Valley	0.78%	0.68%	25,895

EPCOR Arizona	**70.21%**	**61.52%**	**$2,343,946**

*EUSA Plant is not included in schedule E1 and is included through this adjustment.

Q. WHY IS THERE A DIFFERENCE BETWEEN THE GENERAL LEDGER AND THE PLANT ROLLFORWARDS?

A. The plant rollforwards are a tool by which the Company begins with the most recently approved plant and accumulated depreciation balances from the Company's last rate case, and rolls forward the plant additions, retirements, and adjustments through the end of the current test year (December 31, 2019). As part of the Company's overall effort to address accounting irregularities identified in the last water rate case (Decision No. 75268 issued September 8, 2015), a thorough review of prior rate cases was performed to ensure the accuracy and integrity of the Company's accounting records included in this case. Through efforts to tie back to the previous rate case, the Company identified certain inconsistencies in previous plant. As a result of these efforts, the Company determined certain adjustments were needed, including reclassification of plant, accumulated depreciation adjustments, and corrections of mathematical errors. This adjustment reflects the results of those efforts. Because the Company rolled forward per district based on the last rate decision, Table 6 provides the date of the most recent rate decision per district to show when the rollforward per district commenced.

Table 6 Last Rate Case Test Year and Decision for each Water District.

Water District	Last Test Year	Decision
Agua Fria	06/30/10	73145
Anthem	12/31/08	72047
Chaparral	12/31/12	74568
Havasu	06/30/10	73145
Mohave	06/30/13	75268
North Mohave *	12/31/95	60168
Paradise Valley	06/30/13	75268
Sun City	06/30/13	75268
Sun City West	12/31/07	71410
Tubac	06/30/13	75268
Willow Valley	12/31/11	74364

* All plant balances are rolled forward as of EWAZ's acquisition on December 31, 2014

B. TEST YEAR CWIP AND POST TEST YEAR PLANT ADDITIONS (JPB-RB2)

Q. PLEASE EXPLAIN ADJUSTMENT JPB-RB2.

A. Adjustment JPB-RB2 has multiple pieces to adjust Construction Work In Progress ("CWIP") and Plant in Service to include the additional plant costs anticipated to be completed within 12 months of the test year. First, the adjustment removes the CWIP balance at a district and allocated corporate level. It also adds the non-developer portion of costs accumulated in the CWIP balance to Utility Plant in Service to account for test year CWIP completed and placed in service during the post-test year period.

In addition to the expenditures still in CWIP at the end of the test year, some additional costs for projects slated to be completed by December 31, 2020 are

included as well. Additions also include the allocation of appropriate EUSA and Arizona Corporate Post Test Year Plant using the general metered customers allocation factor to the applicable district. EUSA corporate plant is allocated to each state where EUSA has operations while Arizona Corporate plant is allocated to EWAZ's water and wastewater districts. This adjustment adds the post-test year plant ("PTYP") and 50% of the associated depreciation expense to the Accumulated Depreciation balance for one year under the mid-year depreciation convention. Mr. Jeffrey W. Stuck discusses the proposed post-test year additions in greater detail in his Direct Testimony.

All of the CWIP/PTYP projects included in the *pro forma* adjustment consist entirely of revenue-neutral replacements of current facilities necessary to continue to provide safe and reliable service to existing customers. Investments in new plant that will provide service related to growth have not been included in the proposed rate base adjustments. The amounts of PTYP and A/D for twelve months after the end of the test year are summarized below in Table 7, Part 1 and Part 2, respectively:

Table 7 Part 1. Gross UPIS placed in service by 12/31/2020

Water District	7A GMC Factor	6U GMC Factor	Gross POST TEST YEAR UPIS Placed Completed by 12/31/2020	Gross Arizona POST TEST YEAR UPIS Completed by 12/31/2020	Gross EUSA POST TEST YEAR UPIS Completed by 12/31/2020	Adjustment
Arizona Plant (7A)		87.62%		$ 170,000		
EUSA Plant (6U)					$ 236,802	
Agua Fria	24.54%	21.50%	$ 10,946,707	$ 41,712	$ 50,912	$ 11,039,331
Anthem	4.51%	3.96%	1,118,100	7,674	9,366	1,135,140
Chaparral	6.98%	6.12%	2,808,672	11,872	14,490	2,835,034
Havasu	0.95%	0.83%	480,753	1,614	1,970	484,337
Mohave	8.32%	7.29%	1,556,929	14,148	17,268	1,588,345
North Mohave	1.06%	0.93%	1,136,765	1,808	2,207	1,140,780
Paradise Valley	2.52%	2.21%	2,578,258	4,292	5,239	2,587,790
Sun City	12.53%	10.98%	9,885,441	21,298	25,996	9,932,735
Sun City West	7.70%	6.75%	2,301,000	13,096	15,984	2,330,080
Tubac	0.31%	0.27%	226,900	532	649	228,081
Willow Valley	0.78%	0.68%	423,462	1,319	1,610	426,391
EPCOR Arizona			**$ 33,462,988**	**$ 119,364**	**$ 145,691**	**$ 33,728,043**

Table 7 Part 2. A/D Adjustment on UPIS placed in service by 12/31/2020

Water District	A/D Test Year UPIS Adjustment on Plant Completed by 12/31/2020
Agua Fria	$328,839
Anthem	58,255
Chaparral	75,478
Havasu	11,874
Mohave	73,047
North Mohave	27,549
Paradise Valley	121,662
Sun City	194,940
Sun City West	67,054
Tubac	7,147
Willow Valley	18,852
EPCOR Arizona	**$ 984,697**

Since some of the plant in Table 7 (Part 1) above were included in CWIP at the end of the test year, the CWIP has been removed as noted above because it was transferred to UPIS. Any CWIP not completed by December 31, 2020 has also be removed. The decreases to CWIP are summarized in Table 8 below:

Table 8. CWIP Placed in Service by 12/31/2020

Water District	7A GMC Factor	6U GMC Factor	CWIP Completed by 12/31/2020	Arizona CWIP Completed by 12/31/2020	EUSA CWIP Completed by 12/31/2020	Adjustment
Arizona Plant (7A)		87.62%		$ 455,986		
EUSA Plant (6U)					$ 236,802	
Agua Fria	24.54%	21.50%	$ 5,440,847	$ 111,882	$ 50,912	$ 5,603,641
Anthem	4.51%	3.96%	$ 971,700	20,583	9,366	$ 1,001,650
Chaparral	6.98%	6.12%	$ 1,166,027	31,843	14,490	$ 1,212,360
Havasu	0.95%	0.83%	$ 139,014	4,329	1,970	$ 145,313
Mohave	8.32%	7.29%	$ 3,060,570	37,949	17,268	$ 3,115,787
North Mohave	1.06%	0.93%	$ 323,930	4,850	2,207	$ 330,987
Paradise Valley	2.52%	2.21%	$ 7,759,238	11,513	5,239	$ 7,775,991
Sun City	12.53%	10.98%	$ 2,517,813	57,127	25,996	$ 2,600,936
Sun City West	7.70%	6.75%	$ 157,183	35,126	15,984	$ 208,293

Tubac	0.31%	0.27%	$ 132,196	1,427	649	$ 134,272
Willow Valley	0.78%	0.68%	$ 1,067,756	3,537	1,610	$ 1,072,903
EPCOR Arizona			**$ 22,736,275**	**$ 320,167**	**$ 145,691**	**$ 23,202,133**

Q. WHAT IS THE TOTAL IMPACT (NET ADJUSTMENT) TO RATE BASE ASSOCIATED WITH THE ADJUSTMENTS IN TABLES 7 AND 8?

A. The total impact to rate base of the preceding capitalizations of test year, post-test year, and removal of CWIP is summarized below:

Table 9 Net Adjustment to Rate Base

Water District	Total Increase to UPIS Table 7 Part 1	Total Increase to A/D Table 7 Part 2	Total Decrease to CWIP Table 8	CWIP Removed	Total Change to Net Plant In Service
	[A]	[B]	[C]	[D]	= [A] - [B] + [C] + [D]
Agua Fria	11,039,331	328,839	5,603,641	(8,720,175)	8,251,635
Anthem	1,135,140	58,255	1,001,650	(1,307,337)	887,707
Chaparral	2,835,034	75,478	1,212,360	(1,222,504)	2,900,367
Havasu	484,337	11,874	145,313	(326,422)	315,103
Mohave	1,588,345	73,047	3,115,787	(3,004,616)	1,772,564
North Mohave	1,140,780	27,549	330,987	(335,382)	1,163,934
Paradise Valley	2,587,790	121,662	7,775,991	(5,860,235)	4,625,207
Sun City	9,932,735	194,940	2,600,936	(2,635,780)	10,092,830
Sun City West	2,330,080	67,054	208,293	(206,566)	2,398,861
Tubac	228,081	7,147	134,272	(133,801)	235,700
Willow Valley	426,391	18,852	1,072,903	(1,053,496)	464,650
EPCOR Arizona	**$ 33,728,043**	**$ 984,697**	**$ 23,202,133**	**$(24,806,314)**	**$ 33,108,559**

C. REMOVE WASTEWATER VACTOR TRUCKS (JPB-RB6)

Q. PLEASE EXPLAIN ADJUSTMENT JPB-RB6.

A. Vactor and sludge trucks are used solely for wastewater line maintenance operations and should be allocated 100% to EWAZ wastewater districts. This *pro forma* adjustment removes these existing assets since this Application does not include any EWAZ wastewater districts. The costs associated with the Vactor Trucks are embedded in the UPIS and A/D balances allocated in JPB RB-1. The total decrease to each element of rate base is summarized in the tables below:

Table 10. Removal of Vactor Trucks from Water Districts

Water District	GMC Factor	Gross UPIS Allocated thru BU 7A	A/D Allocated thru BU 7A	Net Incr / (Decr) to Rate Base
		$ (952,226)	**$ (658,874)**	
Agua Fria	24.54%	$ (233,641)	$ (161,663)	$ (71,978)
Anthem	4.51%	$ (42,983)	$ (29,741)	$ (13,242)
Chaparral	6.98%	$ (66,496)	$ (46,011)	$ (20,486)
Havasu	0.95%	$ (9,041)	$ (6,256)	$ (2,785)
Mohave	8.32%	$ (79,247)	$ (54,834)	$ (24,414)
North Mohave	1.06%	$ (10,128)	$ (7,008)	$ (3,120)
Paradise Valley	2.52%	$ (24,043)	$ (16,636)	$ (7,407)
Sun City	12.53%	$ (119,298)	$ (82,546)	$ (36,752)
Sun City West	7.70%	$ (73,353)	$ (50,755)	$ (22,598)
Tubac	0.31%	$ (2,980)	$ (2,062)	$ (918)
Willow Valley	0.78%	$ (7,386)	$ (5,111)	$ (2,276)
EPCOR Arizona	**70.21%**	**$ (668,597)**	**$ (462,623)**	**$ (205,975)**

D. CAPITAL LEASE – PHOENIX OFFICE (JPB-RB8)

Q. PLEASE EXPLAIN THIS ADJUSTMENT.

A. Adjustment JPB-RB8 relates to the Company's revised office lease. Included in the test year is the $1,624,302 Right of Use asset created by the lease of the Phoenix office, as required by Generally Accepted Accounting Principles in the United States.

In March of 2020, EWAZ extended the lease of its corporate office through 2030 and added additional office space in response to limitations on space . The modified Right of Use Asset recorded for EWAZ is $5,074,492, requiring an increase to the Right of Use Asset of $3,450,190. This asset is allocated to the individual districts based on general metered customers.

A corresponding adjustment has been made to accumulated depreciation to record a half year of depreciation expense.

E. BROOKE RATE BASE ADJUSTMENT (JPB-RB9)

Q. PLEASE EXPLAIN ADJUSTMENT JPB-RB9.

A. This adjustment is based on EWAZ acquiring the water systems of Brooke Water, LLC from its current owner. EWAZ filed a joint application with Brooke on May 13, 2019 to acquire the systems and to extend its Certificate of Convenience and Necessity ("CC&N") of the Company's Havasu Water District (Docket Nos. WS-01303A-19-0092 & W-03039A-19-0092). That case was merged with Brooke's current rate case in Docket No. W-03039A-17-0295.[3] Brooke updated its rate filing and Staff filed testimony making its recommendations as to updated rates should the Commission not approve the acquisition of Brooke by EWAZ. Brooke had updated its rate filing through September 30, 2019, and included all plant it had completed and placed in service by that time. This adjustment recognizes the original cost rate base of the Brooke water systems adjusted through December 31, 2019, consistent with the test year in this Application and assumes that the Commission will approve EWAZ's request to acquire the Brooke water systems.

Q. IS EWAZ PROPOSING ANY RCN ADJUSTMENT FOR BROOKE?

A. No. For purposes of this proceeding only, EWAZ agrees to have the fair value of the Brooke plant equal to its original cost as set forth in the Brooke rate case that was consolidated with the Joint Application for EWAZ to acquire the Brooke water systems.

Q. DO YOU HAVE ANY TABLES TO ILLUSTRATE THIS ADJUSTMENT?

[3] As of the date this testimony was finalized, a recommended opinion and order ("ROO") had not been issued.

A. Yes. Table 11 show the Brooke plant and accumulated depreciation balances as of December 31, 2019, as included in JPB-RB9.

Table 11. Brooke Plant and Accumulated Depreciation

NARUC Acct	Description	Amount
304100	Structures & Improvements Supply	2,041,399
304500	Structures & Improvements General	11,931
305000	Collect & Impounding	7,210
306000	Lake, River & Other Intakes	1,177
309000	Supply Mains	5,934
310000	Power Production Equipment	2,628
311200	Pumping Equipment Electric	227,310
320100	Water Treatment Equipment Non-Media	64,386
331001	TD Mains Not Classified by Size	56,026
333000	Services	5,053
334100	Meters	50,316
336000	Backflow Prevention Devices	377
341100	Transportation Equip Light Duty Trucks	106,501
341400	Transportation Equipment Other	20,267
343000	Tools,Shop,Garage Equipment	2,503
344000	Laboratory Equipment	390
347000	Miscellaneous Equipment	15,748
348000	Other Tangible Plant	31,485
	Total Plant in Service	$2,650,641
	Accumulated Depreciation	(1,357,185)
	Net Plant in Service	$1,293,456
	Construction Work in Progress	31,206

F. WATER SYSTEM ACQUISITIONS (JBP-RB10)

Q. PLEASE EXPLAIN ADJUSTMENT JPB-RB10

A. Adjustment JPB-RB10 applies to the North Mohave, Mohave, and Willow Valley

districts only. It reflects certain acquisition premiums paid for Willow Valley, the premium paid for EWAZ's purchase of the North Mohave system, and the additional premium to be paid for the purchase of the North Mohave assets. North Mohave was acquired on December 31, 2014, and Willow Valley was purchased on May 9, 2016.

Q. WHAT DECISION AUTHORIZED THE ACQUISITION OF THE WILLOW VALLEY WATER DISTRICT?

A. Decision No. 75484 (March 10, 2016) approved the transfer of Willow Valley Water Co., Inc.'s Certificate of Convenience and Necessity ("CC&N") and the sale of its assets to EWAZ.

Q. WHAT IS THE COMPANY REQUESTING FOR WILLOW VALLEY?

A. EWAZ is requesting an acquisition premium that acknowledges the clear and calculable benefits EWAZ has provided to Willow Valley. Specifically, page 16 line 5 of Decision No. 75484 states:

> *[W]e find that recovery of any acquisition premium or similar adjustment "should be based on [EPCOR's] ability to demonstrate that clear, quantifiable and substantial net benefits have been realized by [Willow Valley's] ratepayers... which would not have been realized had the transaction not occurred."*

Further, the Commission indicated, on Page 16 Line 21, that:

> *"[u]nder the circumstances, we believe it is reasonable and appropriate to defer consideration of recovery of the Acquisition Premium through the proposed [acquisition adjustor mechanism] until Willow Valley's next rate case."*

As shown below, the Company believes it has met the burden of demonstrating quantifiable and substantial benefits, and is therefore requesting recovery of the acquisition premium paid for the Willow Valley assets in this rate application.

Q. WHAT ARE THE QUANTIFIABLE AND SUBSTANTIAL BENEFITS?

A. In Willow Valley's last rate case, with a test year ending December 31, 2011, total operating expenses were $936,001. Under EWAZ's ownership for the period January 1, 2019 to December 31, 2019, total operating expenses (including power costs) were $898,575[4] or a 4 percent decrease. The Company has managed to run the Willow Valley district and decrease expenses since the rates were set based on expense levels that are seven years old. That includes labor, chemicals, and property taxes, which have all increased annually since 2011. Over an eight-year period, the proposed increase equates to less than a .05 percent[5] increase per year, which is far below average inflation of 3.06% percent per year for the last eight years.[6]

Q. HAS THE COMPANY MADE IMPROVEMENTS TO THE SYSTEM SPECIFICALLY TO ADDRESS WATER LOSS?

A. Yes, the Direct Testimony of Mr. Jeffrey W. Stuck discusses how EWAZ has undertaken the replacement of valves and services in the Willow Valley system to combat water loss. The results have been significant. In March 2020, EWAZ filed the 2019 Annual Water Loss Compliance Report for the Willow Valley Water District. Prior to EWAZ's acquisition, water loss was above 25 percent. Currently, water loss in the district, while under EWAZ's ownership, is at 17 percent, which is a *32 percent reduction* to water loss.

Q. ARE THERE ANY OTHER BENEFITS EWAZ OFFERS WILLOW VALLEY RATEPAYERS?

A. Yes, there are several:

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[4] 2019 Test Year Operating Expense as shown on Schedule C-1.
[5] $898,575-$936,001 = -$37,426/$936,001 = 3.998%/8 years = .050%
[6] https://data.bls.gov/timeseries/CUURS48ASA0?amp%253bdata_tool=XGtable&output_view=data&include_graphs=true 2011 Annual Index: 121.483, 2019 Annual Index: 142.920: 142.920-121.483=21.437/7=3.06

(1) EWAZ does not charge Willow Valley customers a deposit for service. Willow Valley customers were previously required to pay a $65 security deposit when establishing service and to maintain that deposit with the utility. Under the terms of the transfer of the Willow Valley assets to EWAZ, Willow Valley residents were refunded their deposits by the previous owner.

(2) Additionally, EWAZ has a more favorable cost of debt than that which was one variable used to determine current rates. EWAZ's cost of debt is only 4.38 percent, while Willow Valley's rates are currently set with an embedded cost of debt of 6.10 percent.[7]

Q. HOW HAS THE COMPANY PROPOSED TO RECOVER THE ACQUISITION PREMIUM?

A. The Company is requesting to include the difference between the price paid for the system and the rate base at the close of the transaction (May 9, 2016) as a regulatory asset, and include it in the calculation of FVRB and amortize it over 12.6 years.

Q. WHY WAS 12.6 YEARS DETERMINED TO BE AN APPROPRIATE AMORTIZATION PERIOD?

A. The Gross Plant at the end of the test year in Willow Valley (prior to allocations) was $6,178,381, and the Accumulated Depreciation was $3,421,407. This means that the system is approximately 55 percent depreciated ($3,421,407/ $6,178,381). The weighted average useful life of Willow Valley's assets is 28.24 years. Since only 45 percent of that life is remaining, 12.6 years (28.24*45 percent) is an appropriate period to amortize the premium paid on those assets.

Q. WHAT IS THE COMPANY REQUESTING FOR THE NORTH MOHAVE

[7] Decision No. 74364 Settlement Schedule D-1

ACQUISITION?

A. Decision No. No. 74174 (October 25, 2013) approved the transfer of North Mohave Valley Corporation's assets to EWAZ. In Decision No. 74174 on Page 5, lines 1 to 3, the Commission stated that recovery of the premium would be better determined in the context of a general rate case. The Company is seeking recovery of the 10 percent premium paid for the North Mohave system, as well as approval to pay and recover an additional $950,000 premium from Mohave customers attributable to Mohave water system interconnections with the North Mohave system (instead of having to build separate facilities at a greater cost to obtain the same benefit). These facilities otherwise would have been built by EWAZ for use by Mohave ratepayers at a substantially higher cost. The acquisition of the North Mohave water system presented an opportunity to interconnect three separate water systems to build redundancy and emergency back-up, and also to eliminate the need for investment in additional storage. Mr. Stuck details these efficiencies further in his Direct Testimony.

Q. PLEASE QUANTIFY THE TWO DIFFERENT PREMIUMS FOR NORTH MOHAVE.

A. The first premium has already been paid to the seller of the North Mohave System. Rate base for North Mohave as of December 31, 2013, was $2,252,337. EWAZ paid $2,477,570 for the system or a premium of $225,234. This premium is 10 percent of rate base, which is less than the premium that most sellers of small systems (whether viable or nonviable) typically believe to be reasonable.

The second premium reflects the true value of the system (at least to EPCOR's customers in Mohave) and what the seller believed to be a fair purchase price of

1.52 times rate base, or $3,427,571. This higher purchase price represents a premium of $1,175,234 ($3,427,571 less $2,252,337).

Q. LET'S START WITH THE FIRST PREMIUM. HOW DOES THAT IMPACT CUSTOMERS' RATES?

A. North Mohave's Rate Base at December 31, 2013 was $2,252,337. EWAZ paid $2,477,570 for the system, or a premium of $225,234. EWAZ is proposing to include the already-paid premium of $225,234 in rate base and to amortize that amount over 21 years at $10,725 per year. The Company's Application reflects this treatment. The cost to North Mohave's 2,100 customers will be approximately $33,214 annually or $1.02[8] per month for each 5/8-inch equivalent meter as set forth in Exhibit JPB-6.

Q. HOW WAS 21 YEARS DETERMINED TO BE AN APPROPRIATE AMORTIZATION PERIOD?

A. The Gross Plant at the end of the test year in North Mohave was $13,466,450, and the Accumulated Depreciation was $5,144,167. This means the system is approximately 38.2 percent depreciated ($5,144,167 divided by $13,466,450). The weighted average useful life of North Mohave's assets is 33.30 years. Since only 61.8 percent of that life is remaining, 21 years (33.30 times 61.8 percent) is an appropriate period over which to amortize the premium paid on those assets.

Q. WHAT DOES THE ADDITION OF THE SECOND PREMIUM DO TO CUSTOMERS' RATES?

A. The Company is requesting to include the additional $950,000 premium in the Mohave Water District rate base in the current application, which reflects (but does

[8] See Exhibit JPB-6.

not fully capture) the system's true value to the Mohave Water District because of the North Mohave Water District's assets being used by the Mohave Water District. EWAZ proposes amortizing this $950,000 premium over 40 years, at a rate of $23,750 per year, which is the approximate average of the 35-year depreciable life of a well and 42-year above ground tank. As discussed in Mr. Stuck's Direct Testimony, interconnection of the North Mohave with two of the water systems within the Mohave Water District avoided the construction of a $1.0 million well and $1.9 million storage tank for the Mohave Water District.

Q. WHAT WOULD IT HAVE COST MOHAVE RATEPAYERS TO BUILD THE BACKUP WELL NEEDED IN THE MOHAVE WATER DISTRICT?

A. As discussed in Mr. Stuck's Direct Testimony, the Company approximates that the required improvements (a well and a storage tank) to the Mohave system would have cost $2,900,000. This would have resulted in an increased revenue requirement of $308,969[9] annually to Mohave's ratepayers, far less than the $121,195[10] proposed by inclusion of the second premium discussed above.

Q. WAS AN RCN BASIS FOR THE PREMIUMS INCLUDED IN THE APPLICATION?

A. No. The premiums paid reflect the fair value of the plant at the time of purchase. No increase beyond this fair value has been requested, especially since the payment of the $950,000 premium is contingent on approval in this rate case.

G. <u>REMOVE WATER HAULING STATION PLANT (JPB-RB11)</u>

Q. WHAT IS THIS PURPOSE OF THIS ADJUSTMENT, MR. BOIZELLE?

[9] $2,900,000 * 7.54*1.3604 = 297,543 + 11,426 = $308,969
[10] $950,000*7.54*1.3604=97,445+23,750=121,195

A. This adjustment removes plant costs, CWIP and A/D associated with the Anthem Water Hauling Station. The tariff for this station was approved in Decision No. 76463 (November 17, 2020). The tariff approved was designed so that those using the stations would entirely cover the costs associated with the station so that no other customers of EWAZ would be responsible for any of the station costs. Thus, this adjustment removes $1,311,514 of Plant in Service, the associated $48,576 of accumulated depreciation, and $62,576 of CWIP associated with the hauling station to ensure that no other customers of EWAZ are paying for it.

Q. IS IT THE SAME ADJUSTMENT FOR RCN?

A. Yes. Schedule B-3 shows the removal of these assets from rate base.

VI. INCOME STATEMENT *PRO FORMA* ADJUSTMENTS

Q. WHAT *PRO FORMA* INCOME STATEMENT ADJUSTMENTS IS EWAZ PROPOSING TO THE HISTORICAL TEST YEAR?

A. EWAZ has identified known and measurable changes to the historical test-year revenues and expenses. Ms. Skoubis provides a full list of all of the pro forma adjustments in her direct testimony. I will be sponsoring and discussing the following adjustments identified by JPB-ISXX where XX represents a number.

JBP-IS1	Adjust Property Taxes to Reflect Proposed Revenues
JPB-IS4	Bad Debt Expense
JPB-IS5	Annualization / Normalization of Revenues
JPB-IS6	Removal of General Disallowable Items
JPB-IS9	Postage Expense
JPB-IS10	Customer Care and Billing Services
JPB-IS11	Chemical Expense

JPB-IS12	CPI Adjustment
JPB-IS13	Annualize Depreciation Expense
JPB-IS14	Depreciation Expense on Post Test Year Plant
JPB-IS17	Removal of Vactor Truck Depreciation
JPB-IS18	Water System Acquisition Amortization *(applicable to Willow Valley, Mohave, and North Mohave only)*
JPB-IS19	Remove Anthem Water Hauling Station Revenue and Expenses *(applicable to Anthem only)*
JPB-IS22	Brooke Revenue / Expense Adjustment *(applicable to Havasu only)*
JPB-IS23	Tank Maintenance
JPB-IS24	Purchased Water Adjustment
JPB-IS25	Power Cost Adjustment
JPB-IS27	City of Phoenix Contract – Paradise Valley (*applicable to Paradise Valley only)*

A. ADJUST PROPERTY TAXES TO REFLECT PROPOSED REVENUE (JPB-IS1)

Q. WHAT IS THE PURPOSE OF THE PROPERTY TAX ADJUSTMENT?

A. The property tax adjustment adjusts the 2019 property tax expense to enable the recovery of property taxes based on known changes in assessment ratios and tax rates. A conforming change in property taxes based on the proposed change in revenues is included on Schedule C-2 with the Proposed Rate Increase.

Q. WHY IS AN ADJUSTMENT FOR PROPERTY TAX EXPENSE NECESSARY?

A. The most recent property tax bills are used to calculate a composite tax rate that is used to annualize EWAZ's property taxes. The assessment ratios and tax rates as determined by state and local authorities are also included in the calculation of the

adjusted test year property taxes. These changes are included as an adjustment to 2019 test year property tax expense as changes to these taxes are known and measurable.

Q. HOW ARE PROPERTY TAXES DETERMINED?

A. Adjusted test year property taxes are based on the average of the prior three years' revenues plus 10% of CWIP, less the book value of transportation equipment to determine a full cash value. An assessment ratio of 18 percent[11] is applied to the full cash value to determine the assessed value upon which the property tax rate is applied to determine property taxes.

Q. HOW WILL EWAZ'S PROPOSED REVENUES AFFECT THE PROPERTY TAXES IT PAYS?

A. The proposed revenues, as requested in this case, will alter the full cash value utilized in the calculation of the assessed value and ultimately the taxes paid by EWAZ. Coupled with known changes to the property tax assessment ratios and rates, property taxes to be paid will increase in the period that the rates that result from this proceeding are in effect. Failure to include these changes would preclude EWAZ from recovering the cost of these increased expenses. The increased expense due to an increase in revenue resulting from this case as reflected on Schedule C-3, the Computation of the Gross Revenue Conversion Factor.

Q. HOW DID YOU ESTABLISH THE ADJUSTMENT FOR PROPERTY TAXES?

A. The adjustment utilizes the adjusted revenues from the test year for the first two years and only includes the proposed increase in the third year (see the conversion

[11] For 2016 and beyond per HB 2001 A.R.S. § 42-15001.

factor column in the adjustment). Revenues used in the calculation of the adjustment are comparable to the revenues that will be used in calculating property taxes beginning immediately after the Commission's decision. Thus, property taxes for 2021 will utilize revenues from 2019-2021, which correctly aligns with any approved changes in water rates.

Q. HOW IS THE PROPERTY TAX RATE DETERMINED FOR EACH DISTRICT?

A. A weighted average has been calculated for each district based on the most recent property tax information available. The weighted average is based on multiple composite rates calculated individually for each parcel by taking 2019 property taxes and dividing by the 2019 assessed value. The weighted average is calculated by district, using an average of the composite rates weighted by the portion each parcel makes up of the total district's 2019 assessed value.

When calculating the property taxes for any proposed consolidated districts, an average rate based on total assessed value and total property taxes is utilized, as no weighted average can be calculated. The composite rate is calculated using total tax combined for all individual districts divided by the total combined assessed value from each of the individual districts.

Q. WHAT EFFECT DOES THIS ADJUSTMENT HAVE ON EXPENSES?

A. The 2019 test year property tax expense is adjusted for each district, creating a combined increase to property tax expense of $623,477, as shown in Schedule C-2, page 4 for each district.

B. <u>BAD DEBT EXPENSE ADJUSTMENT (JPB-IS4)</u>

Q. WHY IS AN ADJUSTMENT TO BAD DEBT EXPENSE NECESSARY?

A. The 2019 test year bad debt expense was calculated based on total Arizona accounts receivable, which was allocated to the districts using a 4-factor allocation methodology. Included in that calculation were recoveries of write-offs originally thought to be uncollectible from prior years and miscellaneous adjustments to accounts receivable balances. In order to accurately reflect the impact of bad debt expense on 2019 expenses, the allocation and adjustments from prior years were removed and replaced with actual activity determined to be uncollectible and written-off in 2019 for each district. The difference between the unadjusted expense amount as allocated and the actual write-offs by district is summarized on Schedule C-2, page 7 for each water district and is included as a *pro forma* adjustment to the test year expense for each district.

Q. PLEASE EXPLAIN HOW THE ADJUSTMENT WAS DETERMINED FOR EACH DISTRICT.

A. Details for bad debt write-offs by customer account were obtained for each district from the Company's third-party billing provider and analyzed to identify actual account write-offs (net of recoveries) pertaining to each month of the test year. The difference between the unadjusted expense amount and the actual write-offs by district was computed and included as an adjustment to the test year expense for each district.

C. ANNUALIZATION / NORMALIZATION OF REVENUES (JPB-IS5)

Q. WHAT IS THE PURPOSE FOR THIS ADJUSTMENT?

A. This adjustment has five components: (1) Revenues, (2) Purchased Water, (3) Fuel & Power, (4) Chemicals, and (5) Customer Accounting. The adjustment to annualize the revenue components for each district is summarized in the table below:

Table 12 Part 1 Annualize / Normalize Revenues

Water District	Other Adj	Accruals	Annualize	Weather Normalization	Tax Credit	Total Water Revenue Adj
Agua Fria	$ (16,154)	$ 576,730	$ (488,591)	$ (405,537)	$ 1,609,622	$ 1,276,070
Anthem	$ (126,842)	$ 109,305	$ 747,870	$ (89,848)	$ 505,769	$ 1,146,254
Chaparral	$ 32,348	$ (138,993)	$ 534,996	$ (77,884)	$ 627,648	$ 978,115
Havasu	$ 8,154	$ (61,292)	$ (13)	$ (39,385)	$ 34,148	$ (58,388)
Mohave	$ 31,314	$ (76,369)	$ 541,069	$ (16,142)	$ 203,997	$ 683,869
North Mohave	$ 3,097	$ (26,027)	$ 94,727	$ (3,209)	$ 6,177	$ 74,765
Paradise Valley	$ 18,444	$ (41,255)	$ 171,596	$ (149,968)	$ 350,884	$ 349,701
Sun City	$ 37,955	$ (51,808)	$ 1,175,490	$ (91,122)	$ 229,911	$ 1,300,426
Sun City West	$ 11,151	$ 88,828	$ 300,590	$ (33,293)	$ 399,385	$ 766,661
Tubac	$ 1,327	$ 19,543	$ (56,918)	$ -	$ 12,799	$ (23,249)
Willow Valley	$ 60,585	$ (6,365)	$ 34,530	$ (1,381)	$ 21,902	$ 109,271
Total	**$ 61,379**	**$ 392,297**	**$ 3,055,346**	**$ (907,769)**	**$ 4,002,242**	**$ 6,603,495**

Q. PLEASE EXPLAIN THE "OTHER ADJ" COLUMN IN TABLE 12.

A. In each water district, certain non-recurring or reconciling amounts were removed from the test year revenues. For example, in Agua Fria, the Company is currently utilizing a Hook-Up Fee Surcredit mechanism to reflect on customers' bills the reduction in revenue requirement associated with the incremental collections of Hook-Up Fees annually. To roll the surcredit into base rates on a going-forward basis, revenues have been decreased by the amount of the surcredit, in order to properly reflect the district's revenue requirement. Also included is the removal on Anthem wheeling revenues which will end in 2020 and the addition of revenues for the new Ritz Carlton resort that is scheduled to open in 2020. All other adjustments

are reconciling adjustments to the general ledger after recalculating test-year revenues using the billing determinants from the customer billing system and are immaterial.

Q. PLEASE EXPLAIN THE "ACCRUALS" COLUMN IN TABLE 12.

A. This adjustment removes unbilled revenues from the test year booked revenues. Unbilled revenue is an estimate of the usage at the end of the month that has yet to be billed. Because the Company performs a separate bill analysis to annualize district revenues, which involves incorporating any changes in customer counts or rate increases that occurred during the test year, it is not appropriate to consider unbilled revenues in this calculation. Therefore, unbilled revenues are removed.

Q. PLEASE EXPLAIN THE "ANNUALIZE" COLUMN IN TABLE 12.

A. This adjustment is to annualize revenues for the average customer population during the year rather than the year-end count. As of December 31, 2019, the customer population is at its highest, and does not properly reflect the experiences of the Company due to seasonality of residents.

Q. PLEASE EXPLAIN THE "TAX CREDIT" COLUMN IN TABLE 12.

A. Due to changes in the tax code from the 2017 Tax Cuts and Jobs Act, the Company provided a one-time credit to customers in May 2019 that decreased revenues in the test year. This decrease will not be present in future years and should be removed to appropriately annualize revenues.

Q. PLEASE EXPLAIN THE "WEATHER NORMALIZE" COLUMN IN TABLE 12.

A. The test year ending December 31, 2019 was a particularly hot year and water sales are not reflective of the Company's normal recurring business experience. This

caused the test year to reflect abnormally high sales, which cannot be relied on to produce revenues sufficient to cover the Company's requested revenue increase. Consequently, the adjustment is necessary to reflect a typical year with average temperatures. The calculation of this adjustment is detailed in the testimony of Mr. Bickey Rimal.

Q. ARE REVENUES FROM BROOKE WATER INCLUDED IN THE ANNUALIZATION?

A. No. Brooke revenues are included in the *pro forma* adjustment JPB-IS22.

Q. ARE EXPENSES ANNUALIZED FOR CHANGES IN CUSTOMER LEVELS IN ADJUSTMENT JPB-IS5 ALSO?

A. Yes. Changes in purchased water, fuel and power, chemicals and customer accounting expenses have been annualized in pro forma adjustment JPB-IS5 to reflect the additional expenses attributable to the additional customers reflected in the revenue adjustments discussed above. A summary of the expense annualizations by district are summarized in Table 13 below.

Table 13. Annualize Expense

Water District	Annualized Expense - Purchased Water	Annualized Expense - Fuel & Power	Annualized Expense - Chemicals	Annualized Expense - Customer Accounting	Total Additional Expense
Agua Fria	$ 46,799	$ 44,108	$ 15,359	$ 16,846	$ 123,112
Anthem	$ 893	$ 551	$ 47	$ 218	$ 1,709
Chaparral	$ 2,146	$ 1,365	$ 282	$ 729	$ 4,522
Havasu	$ 4	$ 1,497	$ 381	$ 775	$ 2,657
Mohave	$ 138	$ 3,214	$ 105	$ 2,475	$ 5,932
North Mohave	$ -	$ 1,583	$ 6	$ 513	$ 2,102
Paradise Valley	$ 26	$ 6,120	$ 203	$ 643	$ 6,992
Sun City	$ 1	$ 4,056	$ 15	$ 1,539	$ 5,611

Sun City West	$ -	$ 1,610	$ 422	$ 830	$ 2,862
Tubac	$ -	$ 5	$ 11	$ 4	$ 20
Willow Valley	$ 12	$ 394	$ 147	$ 472	$ 1,025
EPCOR Arizona	**$ 50,019**	**$ 64,503**	**$ 16,978**	**$ 25,044**	**$ 156,544**

Q. PLEASE EXPLAIN HOW THE COMPANY ANNUALIZED THESE EXPENSES.

A. For each expense item, the Company determined a cost per customer by district by taking the test year adjusted expense and dividing that by the average number of customers. This average cost per customer was then multiplied by the customer growth within the test year for each district.

D. REMOVAL OF GENERAL DISALLOWABLE ITEMS (JPB-IS6)

Q. WHAT IS ADJUSTMENT JPB-IS6 – REMOVAL OF GENERAL DISALLOWABLE ITEMS?

A. Adjustment JPB-IS6 is a *pro forma* adjustment that removes expenses that would typically be disallowed for ratemaking purposes, such as charitable and civic contributions and other miscellaneous expenses that are normally not recoverable from customers. Also excluded are Arizona Corporate and EUSA expenses that are not attributable to operating a utility in Arizona, such as travel expenses to New Mexico or Texas as shown on Schedule C-2, page 9 for each district.

E. POSTAGE INCREASE (JPB-IS9)

Q. WHY IS AN ADJUSTMENT PROPOSED FOR POSTAGE EXPENSES?

A. On January 26, 2020, the U. S. Postal Service ("USPS") increased postage rates over postal rates previously effective from January 27, 2019. The Company has calculated a projected increase based on the known and measurable increases to postage rates.

Q. HOW HAS THE COMPANY CALCULATED THE ADJUSTMENT?

A. Postage quantities and rates were obtained for each of the mailing rates that EWAZ uses when sending bills to customers: 5-Digit, 3-Digit, Automated Area Distribution Center ("AADC"), Mixed AADC, and Single Piece. Each mailing rate is explained in the table below as defined by the USPS website under "Postal Terms."

Table 14. Postal Term Definitions

5-Digit	A presort level in which all pieces in the bundle or container are addressed for delivery within the same 5-digit ZIP Code area.
3-Digit	A presort level in which all pieces in the bundle or container are addressed for delivery within the same first three digits of a 5-digit ZIP Code area (i.e., ZIP Code prefix).
AADC	A presort level in which all pieces in the bundle or container are addressed for delivery in the service area of the same automated area distribution center.
Mixed AADC	A presort level in which all pieces in the bundle or container are addressed for delivery within the service areas of more than one automated area distribution center.
Single-Piece (First Class)	A postage price available for individual, single-piece First-Class Mail. This type of price contrasts with prices available for bulk mail and presorted mail that require a minimum number of pieces and must meet other requirements such as sortation to qualify for the lower prices.

Based on the new rates and bill counts, a revised postage expense was calculated and compared with the test year level of expense to determine the annual increase

for each district. Details of the postage expense adjustment are included on Schedule C-2, page 12 for each district.

F. CUSTOMER CARE AND BILLING SERVICES (JPB-IS10)

Q. WHAT ARE CUSTOMER CARE AND BILLING CHARGES?

A. EWAZ utilizes a third party billing company, Vertex, to bill its customers and manage the call centers. The Company pays Vertex a Customer Utility Service ("C.U.S") charge for billing its customers, operation of the call centers, and work order management. EWAZ is charged on a cost per month, per customer basis.

Q. WHY IS AN ADJUSTMENT NECESSARY?

A. Prices for C.U.S charges have historically changed from year-to-year for inflation based on the CPI. An adjustment is required to accurately account for the anticipated increase due to inflation. An adjustment for 2020 and 2021 is necessary to account for known and measurable increases in costs through the time the new rates resulting from this rate application will be effective.

Q. HOW WAS THE ADJUSTMENT CALCULATED?

A. The U.S. Bureau of Labor Statistics tracks costs and calculates the CPI for multiple geographic areas and product categories. EWAZ obtained the CPI for all Urban Consumers in the Phoenix-Mesa area from 2016 to 2019 and computed an average annual CPI increase of 2.10 % as shown on Schedule C-2, page 13 for each district. The actual CPI for 2020 is not yet available, but will be known and measurable prior to the conclusion of this rate case. The Company will provide the updated information in its rebuttal filing.

G. CHEMICAL EXPENSE (JPB-IS11)

Q. WHAT IS THE PURPOSE OF THIS ADJUSTMENT?

A. In October 2019, the Company's primary supplier of chemicals increased shipment charges from $20 to $100 per delivery. Accordingly, the test year level of chemical expense has been adjusted to reflect the known and measurable changes to the cost of chemicals.

Q. HOW WAS THE ADJUSTMENT CALCULATED?

A. The Company obtained the number of deliveries before and after October of 2019 on a district basis. Deliveries prior to October 2019 were increased for the higher delivery costs.

H. CPI ADJUSTMENT (JPB-IS12)

Q. WHY IS AN ADJUSTMENT FOR PRICING INCREASES JUSTIFIED?

A. Each year, inflation causes prices of goods and services to increase. The pricing of the goods and services that comprise the 2019 test year expenses will be higher in 2020 and increase again in 2021 by virtue of inflation alone. Failure to account for inflation causes unnecessary regulatory lag.

Q. WHY ARE ONLY SOME EXPENSE ACCOUNTS INCLUDED IN THIS ADJUSTMENT?

A. EWAZ recognizes that many of the income statement accounts already have adjustments designed to adjust the 2019 test year expenses to known and measureable future cost levels. The Company is aware of the rate impacts to customers of its adjustments. As a result, EWAZ has selected only 2019 expense accounts with no proposed *pro forma* adjustments to include in this *pro forma* adjustment to account for inflation.

Q. HOW IS THE PRICING INCREASE CALCULATED?

A. The calculation is similar to the adjustment made to Customer Care and Billing Services that I described earlier in my testimony. EWAZ obtained the CPI for all Urban Consumers in the Phoenix-Mesa area from 2016 to 2019 and computed an average annual CPI increase of 3.7%, which was applied to all test year expenses not otherwise adjusted through other *pro forma* adjustments. The calculation is made for 2020 and 2021 as shown on Schedule C-2, page 15 for each district.

I. ANNUALIZE DEPRECIATION EXPENSE (JPB-13)

Q. PLEASE EXPLAIN THIS ADJUSTMENT.

A. This adjustment is comprised of three components: (1) Annualizing Depreciation Expense on Direct Plant; (2) Annualizing Depreciation Expense on Arizona Corporate Plant; and (3) Annualizing Depreciation Expense on EUSA Plant.

1. Annualize Depreciation Expense On Direct Plant

Q. MR. BOIZELLE, HOW DID YOU ANNUALIZE DEPRECIATION EXPENSE ON DIRECT PLANT?

A. Recognizing that a full year of depreciation expense is not reflected on changes to plant in service that occurred during the test year, this *pro forma* adjustment is necessary to annualize the depreciation expense on plant in service as of December 31, 2019. Also included in this adjustment is the annualized depreciation expense of Brooke Water plant based on Havasu's depreciation rates. The adjustment is the difference between the 2019 test year expense and the calculation of depreciation on test year-end plant at the Company's proposed depreciation rates.

Q. IS EWAZ REQUESTING APPROVAL BY THE COMMISSION OF REVISED DEPRECIATION RATES IN THIS APPLICATION?

A. Yes. Please refer to Mr. Guastella's Direct Testimony for a detailed discussion on the Company's proposed depreciation rates.

2. Annualize Depreciation Expense On Arizona Corporate Plant.

Q. WHAT DID YOU THEN DO TO ANNUALIZE DEPRECIATION EXPENSE ON ARIZONA CORPORATE PLANT?

A. As with direct plant, an adjustment to annualize the depreciation expense for Arizona Corporate plant is made and allocated to each district using an allocation factor based on general metered customers.

3. Annualize Depreciation Expense On EUSA Plant

Q. WAS THE SAME PROCESS USED TO ANNUALIZE DEPRECIATION EXPENSE FOR EUSA PLANT?

A. Yes. Depreciation expense is annualized for EUSA plant, and then allocated to the appropriate districts. The adjustment computes the depreciation expense on the EUSA assets allocated to Arizona operations, and then allocates the Arizona portion to each individual district.

J. DEPRECIATION EXPENSE ON POST-TEST YEAR PLANT (JPB-IS14)

Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO ANNUALIZE DEPRECIATION EXPENSE ON POST-TEST YEAR PLANT.

A. The inclusion of post-test year plant also requires the calculation and inclusion of the annual depreciation expense associated with the post-test year plant. The adjustment for each district includes the annual depreciation expense for the district specific post-test year plant as well as the allocation of the annual depreciation expense on the post-test year plant for the Arizona Corporate and EUSA business units to the appropriate districts as shown on Schedule C-2, page 17 for each district.

K. REMOVAL OF VACTOR TRUCK DEPRECIATION (JPB-17)

Q. PLEASE EXPLAIN THE VACTOR TRACK DEPRECIATION ADJUSTMENT.

A. Vactor and sludge trucks are exclusively used in wastewater operations of EWAZ. This adjustment allocates all Vactor and sludge trucks to the wastewater districts. Rate Base Adjustment JPB-RB6 removes the existing asset from this application. This adjustment, JPB-IS17, removes the corresponding depreciation expense associated with those assets as shown on Schedule C-2, page 20 for each district. A summary of the *pro forma* adjustment is detailed in Table 10 above.

L. WATER SYSTEM ACQUISITION AMORTIZATION (JPB-IS18)

Q. PLEASE EXPLAIN THIS ADJUSTMENT AND WHY IT ONLY APPLIES TO WILLOW VALLEY, MOHAVE, AND NORTH MOHAVE.

A. This *pro forma* adjustment amortizes the acquisition premiums associated with the purchases of North Mohave and Willow Valley that are included in rate base adjustment JPB-RB10. Please see the discussion of the calculation of the amortizations earlier in this testimony.

Q. PLEASE SUMMARIZE HOW THE COMPANY PROPOSES TO RECOVER THE ACQUISITION PREMIUM PAID FOR THE PURCHASE OF WILLOW VALLEY.

A. The Company is proposing to include the difference between the price paid for the system and the rate base at the time of close (May 9, 2016), of $193,796, as a Regulatory Asset and amortize it over a 12.6-year period for an annual amortization of $15,381.

Q. PLEASE SUMMARIZE HOW THE COMPANY PROPOSES TO RECOVER THE ACQUISITION PREMIUM PAID FOR THE PURCHASE OF THE NORTH MOHAVE DISTRICT.

A. The Company proposes to amortize the already-paid premium of $225,234 over a 21-year period for an annual amortization of $10,725 for the North Mohave Water District. For the Mohave Water District, the Company proposes to amortize the $950,000 over 40 years for an annual amortization of $23,750.

Table 15 Water System Acquisition Amortization

Water District	Total Premium	Amortization Period (Remaining Life)	Increase / (Decrease) to Expense
Agua Fria			
Anthem			
Chaparral			
Havasu			
Mohave	$950,000	40	$23,750
North Mohave	$225,234	21	$10,725
Paradise Valley			
Sun City			
Sun City West			
Tubac			
Willow Valley	$193,796	12.6	$15,381
Total Amortization			$49,856

M. REMOVE ANTHEM WATER HAULING STATION REVENUE AND EXPENSES *(APPLICABLE TO ANTHEM ONLY)*

Q. WHAT IS THIS ADJUSTMENT?

A. This adjustment removes revenues and expenses associated with the Anthem Water Hauling Station. This adjustment ensures no other customers of EWAZ are paying for any portion of the costs to operate the station.

Q. IS THERE ANYTHING ELSE ABOUT THIS ADJUSTMENT THAT YOU WOULD LIKE TO DESCRIBE IN YOUR DIRECT TESTIMONY?

A. Yes. Included in this *pro forma* adjustment is the reduction of test year revenues from the Anthem Water Hauling Station of $234,016. A *pro forma* adjustment to remove related expenses relating to labor, production, other operating expenses, depreciation, and interest totaling $22,353 is also included.

N. <u>BROOKE REVENUE / EXPENSE ADJUSTMENT *(APPLICABLE TO HAVASU ONLY)*</u> (JPB-IS22)

Q WHAT IS THE PURPOSE FOR THIS ADJUSTMENT, MR. BOIZELLE?

A. This adjustment is based on and assumes that the Commission will approve EWAZ acquiring the water systems of Brooke Water, LLC from its current owner, and therefore recognizes Brooke revenues and expenses rate as of December 31, 2019 to align with the Company's test year.

Q. WHERE WAS THE INFORMATION OBTAINED TO MAKE THIS ADJUSTMENT?

A. The Company requested and received the December 31, 2019 trial balance from Brooke Water. The Company also received billing determinants for the year ended December 31, 2019. From this information, water revenues of $1,213,337 for Brooke customers were calculated based on present Havasu rates. See Havasu H-5 Schedules for a calculation of additional water revenue attributable to Brooke customers. Other revenues of $7,064 are included from the year end trial balance.

Also included in the adjustment are expenses from the trial balance. These balances are further adjusted to remove portions of expenses based on *pro forma* adjustments as included in Brooke's last rate filing. Exclusions include certain expenses relating to bonuses, corporate allocations, legal fees, maintenance expense, and payroll taxes totaling $469,444.

Also excluded from the Brooke trial balance is depreciation expense. As noted above, depreciation expense is calculated on the Brooke assets at the proposed Havasu depreciation rates as included in JPB-IS14.

Details of the adjustment made for Brooke revenues and expenses are detailed on Schedule C-2, page 25.

O. TANK MAINTENANCE EXPENSE (JPB-IS23)

Q. WHAT IS THE PURPOSE OF THE TANK MAINTENANCE EXPENSE ADJUSTMENT?

A. Tank maintenance expenses are often large and vary from year to year. To normalize tank maintenance expenses for inclusion in the test year, the Company has adjusted the actual test-year expense to reflect the average cost of tank maintenance over a planned maintenance program. The tank maintenance program summarizes the anticipated frequency and amount of the costs on a district level by storage tank. Costs are then averaged over the maintenance cycle and summarized by district. Many of the water districts in this Application already have tank maintenance plans authorized by the Commission in previous decisions, noted in Table 16 below. The tank maintenance expense in those districts reflects the previously authorized amounts. This Application also seeks Commission approval of tank maintenance programs for the Sun City West and North Mohave Water

Districts and authorization to defer tank maintenance costs for Willow Valley. Table 16 below is a summary of the tank maintenance expenses for each district. Plans of Administration ("POAs") for Tank Maintenance for Sun City West and North Mohave Water Districts are included as Exhibits JPB-1 and JPB-2, respectively. Also included in Exhibit JPB-3 is the proposed modifications to previously approved POAs to include a true-up at the end of the tank maintenance program to account for tank maintenance expenses greater than or less than the plan costs authorized in the POA. No other adjustment is made other than to standardize the POA format between districts.

Table 16. Summary of Proposed Tank Maintenance Expense

Water District	Decision No.	Approval Date	Authorized Annual Expense	2019 Tank Maintenance Expense	Change in Tank Maintenance Expense
Agua Fria	73145	5/1/2012	$ 376,478	$ 798,819	$ (422,341)
Anthem		*Deferral**	*90,503*	$ 905,027	(814,524)
Chaparral	74568	6/20/2014	202,184	$ 4,250	197,934
Havasu	73145	5/1/2012	76,320	$ -	76,320
Mohave	73145; 75268	5/1/2012; 9/8/2015	244,608	$ 321,019	(76,411)
North Mohave		*Requesting*	*114,583*	$ -	114,583
Paradise Valley	75268	9/8/2015	123,658	$ 223,816	(100,158)
Sun City	72047; 75268	1/6/2011; 9/8/2015	362,187	$ 362,525	(337)
Sun City West		*Requesting*	*227,141*	$ 368,923	(141,782)
Tubac			-	$ -	-
Willow Valley		*Deferral Request*	-	$ -	-
EPCOR Arizona			$ 1,817,662	$ 2,984,379	$ (1,166,716)

*Note: Anthem has approval to defer tank maintenance expense. See Schedule C-2, page 26 for amortization. See Decision No. 72047 (January 6, 2011) at page 58.

P. PURCHASED WATER ADJUSTMENT (JPB-IS24)

Q. PLEASE EXPLAIN ADJUSTMENT JPB-IS24.

A. Adjustment JPB-IS24 is a *pro forma* adjustment for the Agua Fria and Anthem Water Districts to account for known and measurable changes to purchased water expenses relating to Agua Fria's water allocation through the Central Arizona Project ("CAP") and Anthem's Ak-Chin Contract rate for 2020 and 2021.

Agua Fria receives renewable water through a few different sources throughout the district including the CAP, an Ak-Chin contract, and the Maricopa Water District. Depending on the source, rates for these water sources are established by contract or are published in advance. These rates are increasing for CAP delivered water in 2020 and 2021. Using the 2019 CAP allocation and water taken at 2020 and 2021 rates, there is an increase to purchased water expense of $128,666 and $491,708, respectively.

Anthem has a long-term lease with Del Webb and the Ak-Chin Indian Community. Beginning in 2020, the Ak-Chin rates increase from $158 to $186 per acre-foot (an 18 percent increase). These rates will increase to $188 in 2021 (an additional 1 percent increase). A pro forma adjustment increasing the test year purchased water expense of $894,088 (as annualized) for Anthem by 18 percent for 2020 and 1 percent for 2021 results in increases to purchased water expense of $160,381 and $11,338, respectively.

Q. IS THE COMPANY REQUESTING A PWAM FOR ANY DISTRICTS THAT DO NOT CURRENTLY HAVE A MECHANISM TO RECOVER PURCHASED WATER COSTS?

A. Yes. The Company holds five CAP subcontracts for five of its districts (Agua Fria, Sun City, Sun City West, Paradise Valley, and Chaparral) and has adjustor mechanisms approved for all of those water districts except Agua Fria. The Sun City

and Sun City West Water districts have what are called Groundwater Savings Fee ("GSF") surcharges; the Paradise Valley and Chaparral Water Districts' mechanisms are referred to as CAP surcharges. There are also other large renewable water supplies acquired for EWAZ's Agua Fria and Anthem Water districts where the costs are not recovered through an adjustor.

The Company is proposing a PWAM for its Agua Fria Water District, as discussed in Part VII of my testimony.

Q. <u>POWER COST ADJUSTMENT (JPB-IS25)</u>

Q. PLEASE EXPLAIN THE PROPOSED ADJUSTMENT TO PURCHASED POWER EXPENSE.

A. The Company receives power from APS in its Agua Fria, Anthem, Chaparral, Paradise Valley, Sun City, and Sun City West Water Districts. APS recently filed a rate case requesting an increase in electric rates. Additionally, EWAZ has experienced consistent year-over-year increases in APS's bills due to changes in surcharge factors associated with its rate adjustor mechanisms. The Company has no control over these price increases.

An analysis of the Company's electric bills shows that EWAZ is billed on three APS rate schedules: E-30, E-32, and E-221. Based on the corresponding Schedule H-4 from the APS filing for these three rate schedules, the increase in rates ranges from 4.13 to 4.83 percent. Using an average of these increases, a 4.5 percent increase is applied to the test year purchased power expense for 2020 and 2021. These increases result in an increase to test year expenses of $336,600 in 2020 and $351,747 in 2021. The 2021 increase is designed to reflect the increase in electric

expense that results from the APS adjustor mechanisms, which are adjusted annually outside of a rate case filing.

This calculation reflects the requested APS increase for the applicable districts. While the APS rate case has not been concluded, it will be concluded prior to the conclusion of this rate case and final results will be included in the Company's rebuttal filing.

Q. IS THE COMPANY REQUESTING A PCAM FOR ANY OF ITS DISTRICTS THAT DO NOT HAVE A MECHANISM TO RECOVER PURCHASED POWER COSTS?

A. Yes. I discuss the merits of the PCAM as well as other adjustor mechanisms the Company is requesting in this Application in Section VII of my Direct Testimony. My testimony here is describing the *pro forma* adjustments made to power cost expenses in the test year for purposes of establishing the base power costs to include in base rates per district. This level of expense would be the basis for any future adjustments made through the PCAM.

R. <u>CITY OF PHOENIX CONTRACT– PARADISE VALLEY (JPB-IS26)</u>
<u>(applicable to Paradise Valley only)</u>

Q. PLEASE EXPLAIN THIS ADJUSTMENT.

A. In 2018, EWAZ entered into a 20-year contract with the City of Phoenix to take delivery of its Paradise Valley's CAP allocation through the City of Phoenix's water system. This contract enables Paradise Valley to add a renewable water source for Paradise Valley in addition to the existing groundwater resources.

As part of the contract, the City of Phoenix will also treat the CAP water. The first deliveries of this water are scheduled to begin in 2020 upon completion of the City

of Phoenix Interconnect and will increase purchased water costs. A *pro forma* adjustment is made to account for known and measurable increases to purchased water expenses based on an initial CAP allocation of 1,228 acre feet to be treated, with a corresponding reduction to the Company's water treatment expenses.

Q. HOW IS THIS ADJUSTMENT CALCULATED?

A. The City of Phoenix contract details the per acre-foot charges for use of the City of Phoenix's CAP-SRP Interconnect Facility and CAP transportation charges at $3.10 and $37.50, respectively. The contract also includes charges to treat and transport water through the City of Phoenix water system at $1.63 per kgal. The combination of these charges at the 1,228 acre-feet CAP allocation will increase purchased water expenses by $702,093 per year.

A corresponding decrease to chemical expense has been made to offset the water treatment costs that will be performed by the City of Phoenix. Using the 2019 test year chemical expense and water pumped, a chemical expense per thousand gallons of $0.011 is multiplied by the 400,145 thousand gallons (1,228 acre-feet) to be taken through the interconnect to reduce chemical expense by $4,480.

"H" SCHEDULES – PRESENT AND PROPOSED RATE DESIGN, BILLING DETERMINANTS

Q. PLEASE IDENTIFY THE SPECIFIC H SCHEDULES YOU ARE SPONSORING.

A. I am sponsoring the following "H" Schedule in this proceeding:

1 Schedule H-5: Billing Determinants and Customer Annualization by Rate Schedule

Q: PLEASE EXPLAIN SCHEDULE H-5.

A: Schedule H-5 presents sets of billing determinants for each rate schedule from the 2019 test year. The bill count summarizes the number of bills issued during the year by usage block. For rate schedules that are billed on number of units only as opposed to usage, the billing determinant is the number of bills with zero usage, rather than usage.

Schedule H-5 further calculates the annualization of bills at a rate schedule level. The bill annualization is calculated for each rate schedule by determining an average revenue per bill, as well as the percentage of the bill associated with monthly basic charges and applicable percentages by tier. Revenues are annualized by multiplying the average number of customers over the course of the test year by the average revenue per bill. Revenue is then allocated by the aforementioned percentages. Average customers are used to annualize growth which is more representative of actual changes in customer count and reduces the potential to overstate number of customers when year-end customer counts are used.

Schedule H-5 also presents a calculation of the proposed revenues based on the Company's proposed rates as shown on Schedule H-3.

VII. ADJUSTOR MECHANISMS

Q. PLEASE DISCUSS THE ADJUSTOR MECHANISMS THAT THE COMPANY IS REQUESTING AUTHORIZATION TO IMPLEMENT IN THIS PROCEEDING.

A. The Company is requesting to replace its PCAMs currently in effect for Mohave, Paradise Valley, Sun City, and Tubac – and expansion of the PCAM to the Company's Agua Fria, Anthem, Chaparral, Havasu, North Mohave, Sun City West, and Willow Valley Districts. As I mentioned previously, EWAZ seeks approval of

a PWAM for future changes in its purchased water expenses in its Agua Fria Water District. The Company requests that the Commission continue the existing GSF and CAP surcharges in the Sun City, Sun City West, Paradise Valley, and Chaparral Water Districts to recover purchased water costs.

Q. HAS THE COMMISSION ADDRESSED REQUESTS IN THE PAST FOR ANY OF THE REQUESTED ADJUSTOR MECHANISMS THE COMPANY IS SEEKING IN THIS RATE CASE APPLICATION?

A. Yes. EWAZ already has similar power cost adjustor mechanisms approved in Decision No. 75268 (September 8, 2015) for its Sun City, Paradise Valley, Tubac, and Mohave Water Districts, and in Decision No. 76162 (June 28, 2017) for its Arizona Wastewater District.

The proposed PWAM for Agua Fria is similar to purchased water adjustor mechanisms the Commission has approved to collect CAP charges or GSF for Chaparral, Paradise Valley, Sun City, and Sun City West (Decision Nos. 75526, 71841, and 62293).

A. <u>POWER COST ADJUSTOR MECHANISM</u>

Q. PLEASE DISCUSS THE BENEFITS OF A POWER COST ADJUSTMENT MECHANISM FOR CUSTOMERS AND THE COMPANY.

A. The Commission long ago recognized the benefits of adjustor mechanisms such as the proposed PCAM as noted in the following decision:

> If purchased power and/or water costs are trending upward, gradually recognizing those increasing costs through incremental rate adjustments sends a more appropriate price signal to users and receives greater customer acceptance than the less frequent, but far larger, rate increases… If purchased power and/or water costs are

> trending downward, Staff's proposal would delay the refund owing to customers.
>
> *See* Decision No. 58120 (December 23, 1992) at page 30.

The Commission and the Company share a concern over the possibility of rate shock. In fact, the Commission in recent years has requested its Utilities Division Staff ("Staff") to investigate ways to minimize the impact of a needed rate increase on customers' bills. The best way to do this is through gradualism. Rather than having costs build up so that the higher costs suddenly appear on customer bills through the historical test-year process, adjustor mechanisms that pass through changes over time prevent increases from catching customers by surprise. In addition, adjustor mechanisms work both ways, enabling companies to also pass through cost decreases in timely fashion. With the proper determination of the cost of power and a mechanism that includes actual true-ups, an adjustor mechanism can achieve gradualism and flow costs savings back to customers on a timely basis as they happen.

Power Costs make up a sizable portion of EWAZ's operations and maintenance ("O&M") expenses. In the 2019 test year, power costs made up 10 percent of the combined O&M expenses for all eleven districts. Power costs, as a percentage of O&M on a stand-alone district basis, range from a low of 3 percent in Tubac to a high of 21 percent in the Paradise Valley Water District.

Q. HOW DOES EWAZ PROPOSE TO ADMINISTER A PCAM?

A. The PCAM would allow the Company to pass through all purchased power costs over the test year level of expense for any electric service provider supplying retail service to the Company. The proposed mechanism, which provides a more streamlined reconciliation process than currently exists would include a 5%

efficiency credit reducing the amount of allowable cost increases recoverable through the adjustor. The Company proposes to annually calculate a surcharge per-thousand gallons based on purchased power expenses, total consumption for the preceding 12 months, and any over/under collection from previous periods. The Company would anticipate the effective date of the POA and initial surcharge(s) to be concurrent with the effective date of any new rates approved in this case as discussed above.

Q. DOES THE PROPOSED PCAM REPLACE ANY EXISTING PCAMs?

A. Yes. As noted above, Decision No. 75268 approved a PCAM for Sun City, Paradise Valley, Tubac, and Mohave Water Districts. The proposed PCAM would replace the PCAMs currently in effect for all of the water districts.

B. PURCHASED WATER ADJUSTOR MECHANISM

Q. WHY IS THE COMPANY REQUESTING A PURCHASED WATER ADJUSTOR MECHANISM FOR AGUA FRIA?

A. As discussed in the section on the PCAM above, the Commission has long recognized the benefits of power cost and water adjustor mechanisms in times when prices are increasing, especially when those prices are outside of the Company's control. The Company continues to see increases year-over-year in purchased water costs (most of which are for renewable sources) and believes its proposed PWAM for the Agua Fria Water District is the most appropriate method to recover these cost increases without causing rate shock to customers. The Company is not seeking to replace the existing purchased water adjustor mechanisms in the Sun City, Sun City West, Paradise Valley, and Chaparral Water Districts with the PWAM it is proposing for Agua Fria.

Q. WHEN THE SURCHARGE IS IMPLEMENTED, HOW WILL RATEPAYERS BE PROTECTED?

A. The surcharge will only collect actual costs, and the PWAM will include a true up component ensuring that customers are protected. The Company will maintain complete records of invoices for purchased water expense and make annual filings that make all details available for review. If the Commission choses to do so, it can suspend the surcharge request to facilitate a deeper review of the Company's filing. Although decreases in third-party water costs appear unlikely, the adjustor would also pass through any decreases in purchased water expense if they occur. Finally, the surcharge mechanism will always be subject to continued authorization in EWAZ's future general rate cases.

Q. IF APPROVED, HOW WOULD THE COMPANY IMPLEMENT THE SURCHARGE?

A. Similar to the existing purchased water adjustor mechanisms like the GSF in Sun City and Sun City West and the CAP Surcharge in Paradise Valley and Chaparral, beginning in 2022, the Company would file an adjustor at the beginning of the calendar year to pass through changes to annual purchased water costs for the upcoming year. As all known and measurable purchased water costs through 2021 have been included in his application for Agua Fria Water District, the PWAM beginning in 2022 would only include purchased water costs over and above the dollar amount included in the case for Agua Fria.

Q. PLEASE EXPLAIN HOW THE SURCHARGE WOULD PROCEED AFTER THE INITIAL YEAR.

A. To request increases or decreases in purchased water costs, each February, EWAZ will prepare a tariff filing that would include a true-up calculation of the previous

year's actual purchase water costs and the projected annual purchased water costs for the upcoming year. The tariff filing would also contain the prior year's water deliveries subject to the PWAM surcharge and appropriately calculate the per-thousand-gallon rate that should be billed based on the actual historical costs. The surcharge would also include a true up of the prior year's balance, positive or negative.

Q. IF ONE OF THE CONSOLIDATION OPTIONS IS APPROVED IN THIS CASE, HOW WILL THIS AFFECT THE SURCHARGE?

A. EWAZ would use the same POA individualized for Agua Fria for any consolidated region that Agua Fria would be included in, and the same type of information (sales) to compute a surcharge amount for each district. This calculation can also be found in Exhibit JPB-5.

Q. HAVE YOU PREPARED DRAFT PLANS OF ADMINISTRATION FOR THE PROPOSED POWER COST ADJUSTOR MECHANISM, AND PURCHASED WATER ADJUSTOR MECHANISM?

A. Yes, I have. The POA for the proposed PCAM is attached to my Direct Testimony as Exhibit JPB-4 and the POA for PWAM is attached as JPB-5.

VIII. DEPLOYED SERVICE MEMBER CREDIT PROGRAM

Q. WHAT IS THE DEPLOYED SERVICE MEMBER CREDIT PROGRAM?

A. As approved in the Interim Rate Decision No. 77147 (April 16, 2019) for all EWAZ water districts, the Company requests continuation of the Deployed Service Member Credit Program. Given the Company's close proximity to the Luke Air Force Base, many of our customers are active duty service men and women. On occasion, those service members may be required to serve a tour of duty (or deployment) for an

extended period of time away from their primary residence. In these instances, the service member is not using EWAZ's services for much more than simple irrigation and other outdoor maintenance, but is still being charged the basic service charges. The Company would like an opportunity to recognize these circumstances through a credit on the deployed service member's bill if the following criteria are met:

1) Deployment is not a "permanent change of station". Permanent change of station requires a service member to permanently change his or her place of residence, paid for by the applicable military branch. A service member's decision to keep a secondary residence in Arizona would be discretionary and would not qualify for this credit.

2) Deployed service member does not have family living in the premises. Short-term deployments, where a spouse and/or dependents remain stateside would not qualify, as the service member would receive separate compensation from the military to support domestic bills while deployed.

3) The deployed service member is an active member of the military, (e.g. Army, Navy, Marines, Coast Guard, and Air Force).

The credit would be equal to the basic service charge plus the volumetric charges plus any taxes on the monthly water bill. The Company requests accounting authorization to defer any credits provided to deployed service members and would propose recovery in the next general rate case, once the cost of the program can be determined. At this time, a maximum number of participants of 50 per water district seems appropriate, or as a multiple of any district consolidation.

IX. DISABLED MILITARY VETERAN CREDIT PROGRAM

Q. WHAT IS THE DISABLED MILITARY VETERAN CREDIT PROGRAM?

A. The Company is aware of individuals living in our service areas who became disabled as a result of their service in the armed forces. Recognizing the employment and financial difficulties that these individuals experience after being discharged, the Company would like to request the Commission continue the approval given in the interim rate decision to aid these individuals by providing a $10 monthly credit. In order to qualify for the program, an individual must present discharge paperwork from the armed forces indicating any level of disability. The program will be administered on a first-come, first-serve basis for up to 2,000 participants as summarized by water district in the table below.

District	Number of Participants
Agua Fria Water	653
Anthem Water	65
Chaparral Water	163
Havasu Water	65
Mohave Water	311
North Mohave Water	65
Paradise Valley Water	32
Sun City Water	490
Sun City West Water	65
Tubac Water	26
Willow Valley Water	65
Total Company	2000

Q. HOW IS THE COMPANY PROPOSING TO RECOVER THE COSTS TO ADMINISTER THIS PROGRAM?

A. Due to the limited time that this program has been in effect, the Company is requesting continued authority to defer the costs of the program ($240,000 per year if fully subscribed) and propose recovery of all costs deferred in a future rate case application.

X. OTHER ITEMS

Q. ARE THERE ANY OTHER ITEMS YOU WOULD LIKE TO DISCUSS AS PART OF YOUR DIRECT TESTIMONY?

A. Yes. Mr. Guastella has calculated depreciation rates for the Company's plant in service. A number of the vehicles operated by the company are leases that under new accounting rules are treated as right of use assets. Per accounting rules, these assets are depreciated based on the life of the lease. Most of these leases are 3-to-5 year leases and differ from the seven-year life for vehicles shown in Mr. Guastella's testimony. The Company requests Commission approval of depreciation expense that matches the life of the lease for these vehicles. The requested treatment of right of use assets deprecation has been included in the annualization of the depreciation expense as shown in JPB-IS13.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

EXHIBIT JPB-1

EPCOR Water Arizona Inc.
Sun City West Water District
Tank Maintenance Program
Plan of Administration

This Plan of Administration ("Plan") relates to the administration of EPCOR Water Arizona Inc.'s ("EPCOR" or the "Company") Tank Maintenance Program ("Program") for its Sun City West Water District. The purpose of the Plan is to describe how EPCOR will administer the Program as approved by the Arizona Corporation Commission in Docket No. WS-01303A-20-XXXX. This plan is being filed as required in Decision Number [Insert Decision Number]

issued [Insert Date Issued].

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I. Overview

EPCOR is an Arizona public service corporation engaged in providing water utility service in several different parts of Arizona pursuant to Certificates of Convenience and Necessity granted by the Arizona Corporation Commission.

II. General Description – Tank Maintenance Program

The purpose of this Plan of Administration ("POA") is to define the tank maintenance program for the Sun City West Water District of EPCOR Water Arizona (**"**EPCOR") and establish the process for administration of the program. The tank maintenance program was developed to ensure maintenance occurs at a frequency that balances the timing necessary to effectively and economically extend the life of these assets through maintenance activities and in a manner that is not overly burdensome to the customer. As part of normal operating procedures, EPCOR routinely inspects the tanks. There is no clear industry standard frequency for tank maintenance, however, AWWA recommends that recoating of the interior and exterior of tanks occur between 10 and 15 years. The program has been developed based on the number of tanks in the district, the size of those tanks, and the material from which they have been constructed. Program timeframes therefore will vary among districts. Based on the factors listed above, the Sun City West Tank Maintenance Program covers an 8-year period which was determined in an effort to balance the cost associated with maintaining the district's tanks, the timing of the proposed maintenance schedule and the associated cost impact to customers.

III. Basis for Program

The Sun City West Water District performed an analysis of tank condition based on age of the tank, knowledge of the asset condition, and experience maintaining water tanks in the Company's Sun City West Water district.

IV. Components of Program

The Sun City West Water District has four tanks included in this program (refer to Exhibit 1). The in-service dates for these tanks range from 1979 to 1992. All of the tanks included in this program are constructed of steel and are in need of interior and exterior recoating. Many will require non-capital structural repairs. This plan encompasses an 8-year period. The total cost approved for this program is $1,817,130 with an associated annual expense of $227,141.

Tank maintenance expenses will not occur in every month of the fiscal year or at ratable levels on an annual basis. The Company will make every effort to perform tank maintenance at times of the year when the tanks can be taken out of service without causing service level interruptions to customers. This is typically in the low demand times of the year.

V. Accounting

Funds expended for tank maintenance will be separately identified by the Company and recorded in account 5256 – Tank Maintenance which will be rolled up into the Maintenance Expense category on the Company's Income Statement.

VI. Compliance Reports

The Company will track the amounts expended on tank maintenance and make annual filings regarding such costs. The first tracking report will include costs expended in the first year beginning January 1, 2021 through December 31, 2021 along with a download of activity in account 5256 as well as copies of invoices as supporting documentation. The report will also notify parties if there is a change in the anticipated schedule. It will be filed by April 30, 2022 and then annually thereafter throughout the duration of the program.

On or before April 30, 2029 the Company will perform a reconciliation ("final reconciliation") for the 8-year program period commencing January 1, 2021 through December 31, 2028. A comparison of the costs expended during the program period to the total costs approved for the program of $1,817,130 will be performed resulting in either an under/(over) recovery of costs. Upon completion of the final reconciliation, the Company shall file a report identifying the true-up amount. At that time, depending on the amount of the true-up, the Company will work with Commission Staff to determine the best method in which to refund/collect the true-up amount.

EPCOR WATER
SUN CITY WEST WATER DISTRICT
Tank Maintenance Plan
2018 - 2025

Exhibit 1

Engineer's Recommendations

Item No.	Tank	Total	2018	2019	2020	2021	2022	2023	2024	2025
1	SCW WP1 TANK 1	$ 502,850	$ 247,000	$ 35,000	$ -	$ -	$ 182,350	$ -	$ 38,500	$ -
2	SCW WP1 TANK 2	$ 464,080	$ -	$ -	$ -	$ 247,000	$ 35,000	$ 182,080	$ -	$ -
3	SCW WP2 TANK 1	$ 442,350	$ -	$ 187,000	$ 35,000	$ -	$ -	$ -	$ 185,350	$ 35,000
4	SCW WP2 TANK 2	$ 407,850	$ -	$ -	$ 187,000	$ 35,000	$ -	$ -	$ -	$ 185,850
		$ -								
	Total	$ 1,817,130	$ 247,000	$ 222,000	$ 222,000	$ 282,000	$ 217,350	$ 182,080	$ 223,850	$ 220,850
	Annual Average Over 8 Year Period	$ 227,141	$ -			$ -	$ -	$ -	$ -	$ -

EXHIBIT JPB-2

EPCOR Water Arizona Inc.
North Mohave Water District
Tank Maintenance Program
Plan of Administration

This Plan of Administration ("Plan") relates to the administration of EPCOR Water Arizona Inc.'s ("EPCOR" or the "Company") Tank Maintenance Program ("Program") for its North Mohave Water District. The purpose of the Plan is to describe how EPCOR will administer the Program as approved by the Arizona Corporation Commission in Docket No. WS-01303A-20-XXXX. This plan is being filed as required in Decision Number [Insert Decision Number]

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I. Overview

EPCOR is an Arizona public service corporation engaged in providing water utility service in several different parts of Arizona pursuant to Certificates of Convenience and Necessity granted by the Arizona Corporation Commission.

II. General Description – Tank Maintenance Program

The purpose of this Plan of Administration ("POA") is to define the tank maintenance program for the North Mohave Water District of EPCOR Water Arizona ("EPCOR") and establish the process for administration of the program. The tank maintenance program was developed to ensure maintenance occurs at a frequency that balances the timing necessary to effectively and economically extend the life of these assets through maintenance activities and in a manner that is not overly burdensome to the customer. As part of normal operating procedures, EPCOR routinely inspects the tanks. There is no clear industry standard frequency for tank maintenance, however, AWWA recommends that recoating of the interior and exterior of tanks occur between 10 and 15 years. The program has been developed based on the number of tanks in the district, the size of those tanks, and the material from which they have been constructed. Program timeframes therefore will vary among districts. Based on the factors listed above, the North Mohave Tank Maintenance Program covers a 12-year period which was determined in an effort to balance the cost associated with maintaining the district's tanks, the timing of the proposed maintenance schedule and the associated cost impact to customers.

III. Basis for Program

The North Mohave Water District performed an analysis of tank condition based on age of the tank, knowledge of the asset condition, and experience maintaining water tanks in the Company's North Mohave Water district.

IV. Components of Program

The North Mohave Water District has seven tanks included in this program (refer to Exhibit 1). All of the tanks included in this program are constructed of steel and are in need of interior and exterior recoating. Many will require non-capital structural repairs. This plan encompasses a 12-year period. The total cost approved for this program is $1,375,000 with an associated annual expense of $114,584.

Tank maintenance expenses will not occur in every month of the fiscal year or at ratable levels on an annual basis. The Company will make every effort to perform tank maintenance at times of the year when the tanks can be taken out of service without causing service level interruptions to customers. This is typically in the low demand times of the year.

V. Accounting

Funds expended for tank maintenance will be separately identified by the Company and recorded in account 5256 – Tank Maintenance which will be rolled up into the Maintenance Expense category on the Company's Income Statement.

VI. Compliance Reports

The Company will track the amounts expended on tank maintenance and make annual filings regarding such costs. The first tracking report will include costs expended in the first year beginning January 1, 2021 through December 31, 2021, along with a download of activity in account 5256 as well as copies of invoices as supporting documentation. The report will also notify parties if there is a change in the anticipated schedule. It will be filed by April 30, 2022 and then annually thereafter throughout the duration of the program.

On or before April 30, 2033, the Company will perform a reconciliation ("final reconciliation") for the 12-year program period commencing January 1, 2021 through December 31, 2032. A comparison of the costs expended during the program period to the total costs approved for the program of $1,375,000 will be performed resulting in either an under/(over) recovery of costs. Upon completion of the final reconciliation, the Company shall file a report identifying the true-up amount. At that time, depending on the amount of the true-up, the Company will work with Commission Staff to determine the best method in which to refund/collect the true-up amount.

EPCOR WATER
NORTH MOHAVE WATER DISTRICT
Tank Maintenance Plan
2018 - 2029

Exhibit 1

								Inspection Schedule for one tank per year											
		TANK	TANK				Shell	1	2	3	4	5	6	7	8	9	10	11	12
State	Region	NAME	LOCATION	Material	Capacity	Diameter	Height	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
AZ	Eastern	Site #4 Res. 1	North Mohave	steel	500,000	44'	24.0							X					
AZ	Eastern	Site #1 Res 2	North Mohave	steel	500,000	44'	24'	X											
AZ	Eastern	Site #1 Res 3	North Mohave	steel	300,000		24'		X										
AZ	Eastern	Site #2 Res 4	North Mohave	steel	300,000		24'			X									
AZ	Eastern	Site #2 Res 5	North Mohave	steel	300,000		24'				X								
AZ	Eastern	Site #3 Res 6	North Mohave	steel	300,000		24'					X							
AZ	Eastern	Site#3 Res 7	North Mohave	steel	300,000		24'						X						

BULLHEAD CITY COST BASIS per TCI REPORT	$273,000						$275,000.00	$165,000.00	$165,000.00	$165,000.00	$165,000.00	$165,000.00	$275,000.00	
PRICE PER GALLON	$0.55													
ESTIMATED COST														
TOTAL ESTIMATE PROGRAM COST	$1,375,000													
AVERAGE 9-YEAR ANNUALIZED COST	$114,583.33													

EXHIBIT JPB-3

EPCOR Water Arizona Inc.
[Insert District Name] Water District
Tank Maintenance Program
Plan of Administration

This Plan of Administration ("Plan") relates to the administration of EPCOR Water Arizona Inc.'s ("EPCOR" or the "Company") Tank Maintenance Program ("Program") for its [Insert District Name] Water District. The purpose of the Plan is to describe how EPCOR will administer the Program as approved by the Arizona Corporation Commission in Docket No. WS-01303A-20- XXXX. This plan is being filed as required in Decision Number [Insert Decision Number]

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I. Overview

EPCOR is an Arizona public service corporation engaged in providing water utility service in several different parts of Arizona pursuant to Certificates of Convenience and Necessity granted by the Arizona Corporation Commission.

II. General Description – Tank Maintenance Program

The purpose of this Plan of Administration ("POA") is to define the tank maintenance program for [Insert Water District's Name] Water District of EPCOR Water Arizona ("EPCOR") and establish the process for administration of the program. The tank maintenance program was developed to ensure maintenance occurs at a frequency that balances the timing necessary to effectively and economically extend the life of these assets through maintenance activities and in a manner that is not overly burdensome to the customer. As part of normal operating procedures, EPCOR routinely inspects the tanks. There is no clear industry standard frequency for tank maintenance, however, AWWA recommends that recoating of the interior and exterior of tanks occur between 10 and 15 years. The program has been developed based on the number of tanks in the district, the size of those tanks, and the material from which they have been constructed. Program timeframes therefore will vary among districts. Based on the factors listed above, the [Insert Water District's Name] Tank Maintenance Program covers a [Insert duration of Program]-year period which was determined in an effort to balance the cost associated with maintaining the district's tanks, the timing of the proposed maintenance schedule and the associated cost impact to customers.

III. Basis for Program

The [Insert Water District's Name] Water District performed an analysis of tank condition based on age of the tank, knowledge of the asset condition, and experience maintaining water tanks in the Company's [Insert Water District's Name] Water district.

IV. Components of Program

The [Insert Water District's Name] Water District has [Insert Number of tanks] tanks included in this program
([Attach copy of Tank Maintenance Plan as an Exhibit]. The in-service dates for these tanks range from [Insert Oldest Year] to [Insert Youngest Year]. All of the tanks included in this program are constructed of steel and are in need of interior and exterior recoating. Many will require non-capital structural repairs. This plan encompasses a [Insert number of years covered by program]-year period. The total cost approved for this program is $X,XXX,XXX with an associated annual expense of $XXX,XXX.

Tank maintenance expenses will not occur in every month of the fiscal year or at ratable levels on an annual basis. The Company will make every effort to perform tank maintenance at times of the year when the tanks can be taken out of service without causing service level interruptions to customers. This is typically in the low demand times of the year.

V. Accounting

Funds expended for tank maintenance will be separately identified by the Company and recorded in account 5256 – Tank Maintenance which will be rolled up into the Maintenance Expense category on the Company's Income Statement.

VI. Compliance Reports

The Company will track the amounts expended on tank maintenance and make annual filings regarding such costs. The first tracking report will include costs expended in the first year beginning January 1, 2021 through December 31, 2021, along with a download of activity in account 5256 as well as copies of invoices as supporting documentation. The report will also notify parties if there is a change in the anticipated schedule. It will be filed by April 30, 2022 and then annually thereafter throughout the duration of the program.

On or before April 30, [Insert YEAR after program period ends], the Company will perform a reconciliation ("final reconciliation") for the [Insert number of years covered by program]-year program period commencing January 1, 2021 through December 31, [Insert last year of program expenditures]. A comparison of the costs expended during the program period to the total costs approved for the program of $X,XXX,XXX will be performed resulting in either an under/(over) recovery of costs. Upon completion of the final reconciliation, the Company shall file a report identifying the true-up amount. At that time, depending on the amount of the true-up, the Company will work with

Commission Staff to determine the best method in which to refund/collect the true-up amount.

EXHIBIT JPB-4

EPCOR Water Arizona Inc.
Power Cost Adjustor Mechanism
Plan of Administration

This Plan of Administration ("Plan") relates to the administration of EPCOR Water Arizona Inc.'s ("EWAZ" or the "Company") Power Cost Adjustor Mechanism ("Mechanism") for its proposed [Insert District Name] Water District. The purpose of the Plan is to describe how EWAZ will administer the Mechanism as approved by the Arizona Corporation Commission in Docket No. WS-01303A-20-XXXX. This plan is being filed as required in Decision Number [Insert Decision Number] issued [Insert date of Decision].

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IV. Application to Water Customers 4

I. Overview

EPCOR Water Arizona Inc. ("EWAZ" or "Company") is an Arizona public service corporation engaged in providing water and wastewater utility services in several different parts of Arizona pursuant to a Certificate of Convenience and Necessity granted by the Arizona Corporation Commission.

II. General Description

This document is the Plan of Administration ("POA") for the Power Cost Adjustment Mechanism ("PCAM") approved for EWAZ by the Arizona Corporation Commission ("ACC" or "Commission") in Decision No. [Insert Decision Number] issued [Insert date of Decision]. The PCAM allows the Company to pass through its purchased power costs for any electric service provider supplying retail service to the Company to its customers.

III. PCAM Related Filings

A. The Company shall file with docket control a summary of all electrical costs, total collections from the surcharge, and the updated surcharge amount. The first report will be based on the period [Insert Start Date] through [Insert date 12 months after Start Date] to be consistent with the Test Year approved in the Decision. This report will be filed within 60 days of the end of the reporting period, [Insert date 60 days after end of Reporting Period], and then annually thereafter. The adjustor will be effective 30 days after the annual filing, [Insert date 90 days after the Reporting Period], and then annually thereafter.

B. EWAZ will provide the ACC with a spreadsheet detailing exactly how the Company calculated the PCAM surcharge for [Insert District Name]. The actual amounts recovered from or refunded to customers will be separately identified by EWAZ and recorded in a balancing account. As part of each annual filing, the Company will perform a reconciliation for the prior reporting period comparing the amounts recovered from / refunded to customers to the amount of increase / decrease in power expenses due to changes in rates for that same

period resulting in either an under / (over) recovery. This true-up amount will be included in the next annual calculation.

C. All revised schedules filed with the Commission pursuant to the provisions of this PCAM will be accompanied by documentation prepared by EWAZ in a format approved by the Utilities Division Staff of the Commission and will contain sufficient detail to enable the Commission to verify the accuracy of EWAZ's calculations.

D. The surcharges will not become effective until approved by the Commission.

E. The Company will file a report annually with the Commission, detailing its purchased power costs and any conservation or power-shifting measures utilized by the Company.

F. The Company shall provide notice (in a form acceptable to Utilities Division Staff) of the rate increases to customers.

IV. Application to Water Customers

A. The calculated increases or decreases in rates for the [Insert District name] Water District must amount to at least a 2% change in power cost and $.0001 per thousand gallons, after rounding the calculation, before an adjustment to customers' bills can be made. If the calculation results in a positive or negative change of less than $.0001 per thousand gallons, the electric power expenses paid will be carried over to the next reporting period. In the event of a carry over, any electric power expenses adjustments billed to customers will be subject to true-up.

B. See Example attached as Exhibit 1 for a hypothetical calculation consistent with the proposed methodology.

Arizona Corporation Commission EPCOR Water Arizona Inc. Docket No. WS-01303A-20-XXXX Power Cost Adjustor Mechanism Plan of Administration

EXHIBIT 1

Example (numbers are for illustrative purposes only):

Example A

	Test year	
	Purchased Power Expense	$ 1,000,000
	Total water Consumption (in kgals)	$1,000,000
	Current Year	
	Purchased Power Expense	$ 1,200,000
	Total water Consumption (in kgals)	1,000,000 kgals
*	% Change in power Cost	20%
	Under / (Over) collected Balance from prior years	0
	Under / (Over) collected Current year	$ 200,000
	Less 5% Efficiency Credit	$ 10,000
	Total amount to Recover	$ 190,000
*	**Surcharge per kgal**	**$ 0.19**

* Both conditions must exist in order to trigger surcharge

Example B

	Test year	
	Purchased Power Expense	$ 1,000,000
	Total water Consumption (in kgals)	$ 1,000,000
	Current Year	
	Purchased Power Expense	$ 1,300,000
	Total water Consumption (in kgals)	2,000,000 kgals
*	% Change in power Cost	30%
	Under / (Over) collected Balance from prior years	$ (190,000)
	Under / (Over) collected Current year	$ 300,000
	Less 5% Efficiency Credit	$ 15,000
	Total amount to Recover	$ 95,000
*	**Surcharge per kgal**	**$ 0.0475**

* Both conditions must exist in order to trigger surcharge

EXHIBIT JPB-5

EPCOR Water Arizona Inc.
Purchased Water Adjustor Mechanism
Plan of Administration

This Plan of Administration ("Plan") relates to the administration of EPCOR Water Arizona Inc.'s ("EWAZ" or the "Company") Purchased Water Adjustor Mechanism ("PWAM") for its proposed Agua Fria Water District. The purpose of the Plan is to describe how EWAZ will administer the PWAM as approved by the Arizona Corporation Commission in Docket No. WS-01303A-20-XXXX. This plan is being filed as required in Decision Number [Insert Decision Number] issued [Insert date of Decision].

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I. Overview

EPCOR Water Arizona Inc. ("EWAZ" or "Company") is an Arizona public service corporation engaged in providing water and wastewater utility services in several different parts of Arizona pursuant to a Certificate of Convenience and Necessity granted by the Arizona Corporation Commission.

II. General Description

This document is the Plan of Administration ("POA") for the Purchased Water Adjustment Mechanism ("PWAM") approved for EWAZ by the Arizona Corporation Commission ("ACC" or "Commission") in Decision No. [Insert Decision Number] issued [Insert date of Decision]. The PWAM allows the Company to pass through purchased water costs incurred by the Company to its customers.

III. PWAM Related Filings

A. The Company shall file with Docket Control a summary of all purchased water costs, total collections from the surcharge, and the updated surcharge amount. The first report will be based on the period [Insert Start Date] through [Insert date 12 months after Start Date] to be consistent with the Test Year approved in the Decision. This report will be filed within 60 days of the end of the reporting period, [Insert date 60 days after end of Reporting Period], and then annually thereafter. The adjustor will be effective 30 days after the annual filing, [Insert date 90 days after the Reporting Period], and then annually thereafter.

B. EWAZ will provide the ACC with a spreadsheet detailing exactly how the Company calculated the PWAM surcharge for Agua Fria Water District. The actual amounts recovered from or refunded to customers will be separately identified by EWAZ and recorded in a balancing account. As part of each annual filing, the Company will perform a reconciliation for the prior reporting period comparing the amounts recovered from / refunded to customers to the amount of increase / decrease in water expenses due to changes in rates for that same period resulting in either an under / (over) recovery. This true-up amount will be included in the next annual calculation.

C. All revised schedules filed with the Commission pursuant to the provisions of this PWAM will be accompanied by documentation prepared by EWAZ in a format approved by the Utilities Division Staff of the Commission and will contain sufficient detail to enable the Commission to verify the accuracy of EWAZ's calculations.

D. The surcharges will not become effective until approved by the Commission.

E. The Company will file a report annually with the Commission, detailing its purchased water costs by the Company.

F. The Company shall provide notice (in a form acceptable to Utilities Division Staff) of the rate changes to customers.

IV. Application to Water Customers

A. The calculated increases or decreases in rates for the Agua Fria Water District must amount to at least $.0001 per thousand gallons, after rounding the calculation, before an adjustment can be made on customers' bills. If the calculation results in a positive or negative change of less than $.0001 per thousand gallons, the purchased water expenses paid will be carried over to the next reporting period. In the event of a carry over, any purchased water expense adjustments billed to customers will be subject to true-up.

B. See Example attached as Exhibit 1 for a hypothetical calculation consistent with the proposed methodology.

EXHIBIT 1

Example (numbers are for illustrative purposes only):

Test Year	
Purchased Water Expense	$1,000,000
Total Water Consumption	1,000,000 kgals
Surcharge per 1,000 gallons	$1.0000

Current Year		
Purchased Water Expense		$1,200,000
Total Prior Year Purchased Water Expense	$1,000,000	
Total PWAM charges collected	$1,100,000	
Under/(Over) Collection		($100,000)
Total Amount to Recover		$1,100,000
Total Water Consumption (Present Year)		1,000,000 kgals
Surcharge per 1,000 gallons		$1.100

EXHIBIT JPB-6

Line No.			Original Premium
1	North Mohave Rate Base as of 12/31/2014		$ 2,252,337
2	Acquisition Premium		225,234
3	Total Closing Price	Sum Lines [1] and [2]	2,477,570
4			
5	Difference Between Price Paid and Rate Base (Premium)		$ 225,234
6			
7	North Mohave ROR	Sch A-1	7.38%
8	Gross Revenue Conversion Factor	Sch A-1	1.35
9	Revenue Requirement	Line [7] * Line [9]	$ 22,489
10	Plus Amortization	Line [9]/ 20 years	$ 10,725
11	Total Annual cost to ratepayers		$ 33,214
12			
13			

14	Rate Class/Size	Customer Count	Equivalent 5/8" Meter	Weight	Premium 1 Applied to Class	Monthly Cost to Customers
15		[A]	[B]	[C] = [A] * [B]	[D] = [C] * Line [11]	[E] = [A] * [D]
16	5/8" meters	1,982	1.00	1,982	$ 24,217	$ 1.02
17	3/4" meters	-	1.50	-	-	-
18	1" meters	47	2.50	116	1,420	2.54
19	1.5" meters	28	5.00	140	1,715	5.09
20	2" meters	53	8.00	427	5,220	8.14
21	3" meters	2	15.00	28	336	15.27
22	4" meters	1	25.00	25	305	25.45
23	6" meters	-	50.00	-	-	-
24	8" meters	-	80.00	-	-	-
25	Total	2,113	188	2,719	$ 33,214	

EPCOR Water Arizona Inc.
Docket No. WS-01303A-20-XXXX
Test Year Ended December 31, 2019

EPCOR Direct Testimony

Ms. Sandra L. Skoubis

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

ROBERT "BOB" BURNS, Chairman
BOYD DUNN
SANDRA D. KENNEDY
JUSTIN OLSON
LEA MÁRQUEZ PETERSON

IN THE MATTER OF THE APPLICATION OF EPCOR WATER ARIZONA INC. FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND INCREASES/DECREASES IN ITS RATES AND CHARGES BASED THEREON FOR UTILITY SERVICE BY ITS AGUA FRIA, ANTHEM, CHAPARRAL, HAVASU, MOHAVE, NORTH MOHAVE, PARADISE VALLEY, SUN CITY, SUN CITY WEST, TUBAC, AND WILLOW VALLEY WATER DISTRICTS AND FOR CONSIDERATION OF CONSOLIDATION PROPOSALS	DOCKET NO: WS-01303A-20-____

DIRECT TESTIMONY
OF
SANDRA L. SKOUBIS
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

DIRECT TESTIMONY
OF
SANDRA L. SKOUBIS
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

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EXECUTIVE SUMMARY

Ms. Sandra L. Skoubis sponsors the following:

Sandra L. Skoubis sponsors the following *pro forma* adjustments to the B Schedules:

SLS-RB3	AIAC Refunds Paid Post Test Year
SLS-RB4	Removal of CIAC not in Plant in Service
SLS-RB5	Remove Plant Acquisition Adjustment
SLS-RB7	Regulatory Assets and Liabilities
SLS-RB12	ADIT Balances

Ms. Skoubis sponsors the following C Schedules on behalf of the Company:

Schedule C-1:	Adjusted Test Year Income Statement
Schedule C-2:	Income Statement *Pro Forma* Adjustments
Schedule C-3:	Computation of Gross Revenue Conversion Factor

Ms. Skoubis also sponsors the following *pro forma* adjustments to the C Schedules:

SLS-IS2	Federal and State Income Taxes
SLS-IS3	Interest Synchronization with Rate Base
SLS-IS7	Annualize Labor & Labor Related Expenses
SLS-IS8	Removal of 10% of Performance Based Compensation
SLS-IS15	Annualize Amortization of CIAC
SLS-IS16	Adjust Corporate Allocations
SLS-IS20	Regulatory Asset/Liability Amortization
SLS-IS21	ADIT Amortization
SLS-IS26	Insurance Other Than Group

Ms. Skoubis also sponsors the following Schedules on behalf of the Company:

Schedule E-1	Comparative Balance Sheets
Schedule E-2	Comparative Income Statements
Schedule E-3	Comparative Statement of Changes in Financial Position
Schedule E-6	Comparative Departmental Statements of Operating Income
Schedule E-7	Operating Statistics
Schedule E-8	Taxes Charged to Operations
Schedule E-9	Notes to Financial Statements
Schedule F-1	Projected Income Statements – Present & Proposed Rates
Schedule F-2	Projected Statements of Changes in Financial Position
Schedule F-3	Projected Construction Requirements
Schedule F-4	Assumptions Used in Rate Filing

Ms. Skoubis also sponsors Schedule H-6 – Proposed Tariffs.

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND TELEPHONE NUMBER.

A. My name is Sandra L. Skoubis. My business address is 2355 West Pinnacle Peak Road, Suite 300, Phoenix, Arizona 85027, and my business phone is 623-445-2490.

Q. IN WHAT CAPACITY AND BY WHOM ARE YOU EMPLOYED?

A. I am employed by EPCOR USA Inc. ("EUSA") as a Senior Rate Analyst.

Q. PLEASE DESCRIBE YOUR PRIMARY RESPONSIBILITIES FOR THE COMPANY.

A. My primary responsibilities are to prepare and support rate applications and other regulatory filings for EPCOR Water Arizona Inc. ("EWAZ" or "Company"), EPCOR Water New Mexico Inc. ("EWNM"), and EPCOR Gas Texas Inc.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE AND EDUCATION.

A. I joined EUSA (formerly Arizona-American Water Company) in 2007 as a Regional Capital Compliance Analyst and was promoted to the position of Rate Analyst in December 2008 and to Senior Rate Analyst in April 2012. In my current position, I am responsible for maintaining the Company's tariffs, ensuring compliance with Commission decisions and preparing regulatory filings for changes in rates. I have over 29 years of experience working in the public utility industry, most of that time being employed with WE Energies ("WE"). My responsibilities there initially included areas such as financial reporting, pension

analysis, unbilled revenue calculations, and power marketing settlements. I progressed to Project Manager in the Federal Regulatory Affairs and Policy Group where my responsibilities included monitoring tariffs to assure compliance with all federal/state decisions and rulings, tracking industry changes to determine impacts on WE, as well as interactions with the Federal Energy Regulatory Commission, North American Electric Reliability Corporation, North American Energy Standards Board, and the National Association of Regulatory Utility Commissioners ("NARUC") to assure WE's position was fairly represented.

I have a Bachelor of Business Administration degree with a double major in Accounting and Real Estate from the University of Wisconsin – Milwaukee. I am a certified public accountant licensed in the state of Arizona. I have also attended the NARUC Utility Rate School.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS CASE?

A. The purpose of my testimony is to support the *pro forma* adjustments that impact rate base as well as revenues and expenses in determining the revenue requirements for EWAZ's eleven water districts. The eleven water districts are Agua Fria, Anthem, Chaparral, Havasu, Mohave, North Mohave, Paradise Valley, Sun City, Sun City West, Tubac, and Willow Valley.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. My testimony first presents the schedules required by the Commission's standard filing requirements for financial and statistical information identified in the

Arizona Administrative Code at Title 14, Chapter 2, Section 103 (A.A.C. R14-2-103) that I am sponsoring. Next, I summarize the Company's calculated Operating Income for all of the districts in this Application followed by a discussion of the *pro forma* adjustments that I am sponsoring.

Q. DOES YOUR TESTIMONY INCORPORATE RECOMMENDATIONS OF OTHER COMPANY WITNESSES?

A. Yes. I have incorporated recommendations sponsored by Mr. Thomas A. Loquvam, Ms. Sheryl L. Hubbard and Mr. Jon P. Boizelle as *pro forma* adjustments to test year revenues and expenses and rate base where applicable.

II. SPONSORED SCHEDULES

A "C" SCHEDULES – TEST YEAR INCOME STATEMENTS

Q. PLEASE IDENTIFY THE SPECIFIC C SCHEDULES YOU ARE SPONSORING:

A. I am sponsoring the following schedules for the Company:

1. **Schedule C-1: Adjusted Test Year Income Statement**
2. **Schedule C-2: Income Statement *Pro Forma* Adjustments**
3. **Schedule C-3: Computation of Gross Revenue Conversion Factor**

Q. PLEASE EXPLAIN SCHEDULE C-1:

A. Schedule C-1 titled "Adjusted Test Year Income Statement" sets forth revenues and expenses and the resulting net income both on an historical unadjusted basis and an adjusted basis which includes the Company's proposed *pro forma*

adjustments. This schedule also contains a summary of the proposed revenue increase and the associated income tax and property tax effects, as well as an allowance for bad debt expense related to the revenue increase.

Q. PLEASE EXPLAIN SCHEDULE C-2:

A. Schedule C-2 titled "Income Statement *Pro Forma* Adjustments" presents all *pro forma* adjustments and the adjusted 2019 test year revenues and expenses. I sponsor some of the adjustments on Schedule C-2, as included in my testimony below. Mr. Jon P. Boizelle sponsors the remaining adjustments in his Direct Testimony. The proposed revenue increase was provided to Company witness, Mr. Bickey Rimal, who is responsible for the "H" Schedules that support the derivation of the present and proposed revenues in this case (Schedules H-1 through H-5).

Q. PLEASE EXPLAIN SCHEDULE C-3:

A. Schedule C-3 titled "Computation of Gross Revenue Conversion Factor" illustrates the calculation of the gross revenue conversion factor using federal and state income taxes, property taxes, and bad debt expense. The gross revenue conversion factor is utilized on Schedule A-1 while some of the individual net of tax factors are used throughout this case to adjust revenues and expenses to account for taxes and uncollectible revenues.

B "E" SCHEDULES – FINANCIAL STATEMENTS AND STATISTICAL DATA

Q. PLEASE IDENTIFY THE SPECIFIC "E" SCHEDULES YOU ARE SPONSORING:

A. I am sponsoring the following schedules for the Company:

1	**Schedule E-1:**	**Comparative Balance Sheets**
2	**Schedule E-2:**	**Comparative Income Statements**
3	**Schedule E-3:**	**Comparative Statement of Changes in Financial Position**
4	**Schedule E-6:**	**Comparative Departmental Statements of Operating Income**
5	**Schedule E-7:**	**Operating Statistics**
6	**Schedule E-8:**	**Taxes Charged to Operations**
7	**Schedule E-9:**	**Notes to Financial Statements**

Q. PLEASE EXPLAIN SCHEDULE E-1.

A. Schedule E-1 for each of EWAZ's water districts titled "Comparative Balance Sheets" contains balance sheets for the test year ended December 31, 2019 and prior years ending December 31, 2018 and December 31, 2017. Balance Sheets are presented for the district inclusive of Arizona Corporate allocations (Schedule E1) and for the district before Arizona Corporate allocations (Schedule E1a) as well as a corporate balance sheet (Schedule E1b).

Q. PLEASE EXPLAIN SCHEDULE E-2.

A. Schedule E-2 is titled "Comparative Income Statements". This schedule summarizes each district's unadjusted Income Statements as reflected in the Company's accounting records for the test year ended December 31, 2019, as well as for the prior two years, and includes each district's allocated share of Arizona Corporate expenses.

Q. PLEASE EXPLAIN SCHEDULE E-3.

A. Schedule E-3 is titled "Comparative Statements of Changes in Financial Position". This schedule summarizes the sources and applications of funds by the districts for the test year ended December 31, 2019, and prior years ending December 31, 2018 and December 31, 2017.

Q. PLEASE EXPLAIN SCHEDULE E-6.

A. Schedule E-6 titled "Comparative Departmental Statements of Operating Income" summarizes the operating income statements on a functional basis for the test year ended December 31, 2019, as well as for the prior two years. Income Statements are presented for the district inclusive of Arizona Corporate allocations (Schedule E6) and for the district before Arizona Corporate allocations (Schedule E6a) as well as an Arizona Corporate income statement (Schedule E6b).

Q. PLEASE EXPLAIN SCHEDULE E-7.

A. Schedule E-7 titled "Operating Statistics" displays the operating statistics for sales quantities and average number of customers for each water district for the test year as well as the prior two years.

Q. PLEASE EXPLAIN SCHEDULE E-8.

A. Schedule E-8 titled "Taxes Charged to Operations" provides details regarding taxes incurred for each water district for the test year as well as the prior two years.

Q. PLEASE EXPLAIN SCHEDULE E-9.

A. Schedule E-9 titled "Notes to Financial Statements" provides a list of important facts pertaining to the financial statements applicable to each district.

C "F" SCHEDULES – PROJECTIONS AND FORECASTS

Q. PLEASE IDENTIFY THE SPECIFIC "F" SCHEDULES YOU ARE SPONSORING.

A. I am sponsoring the following "F" Schedules for the Company:

1	**Schedule F-1:**	**Projected Income Statements – Present & Proposed Rates**
2	**Schedule F-2:**	**Projected Statements of Changes in Financial Position**
3	**Schedule F-3:**	**Projected Construction Requirements**
4	**Schedule F-4:**	**Assumptions Used in Rate Filing**

Q. PLEASE EXPLAIN SCHEDULE F-1.

A. Schedule F-1 titled "Projected Income Statements – Present and Proposed Rates" displays the test-year income and forecasted income for the test year ending December 31, 2019, using test-year rates and proposed rates from this case.

Q. PLEASE EXPLAIN SCHEDULE F-2.

A. Schedule F-2 titled "Projected Statements of Changes in Financial Position" displays the sources and applications of funds for the test year and projected results using test-year rates and proposed rates from this case.

Q. PLEASE EXPLAIN SCHEDULE F-3.

A. Schedule F-3 titled "Projected Construction Requirements" presents the actual construction expenditures during the test year ended December 31, 2019, as well

as the projected construction expenditures for the periods December 31, 2020, December 31, 2021 and December 31, 2022.

Q. PLEASE EXPLAIN SCHEDULE F-4.

A. Schedule F-4 titled "Assumptions Used in Rate Filing" provides a summary of assumptions by district that the Company used in preparation of this filing.

D "H" SCHEDULES –PROPOSED TARIFFS

Q. PLEASE IDENTIFY THE SPECIFIC "H" SCHEDULES YOU ARE SPONSORING.

A. I am sponsoring Schedule H-6 titled Proposed Tariffs for each of the stand-alone water districts of the Company.

Q. PLEASE EXPLAIN SCHEDULE H-6.

A. Schedule H-6 reflects the proposed changes to the usage and commodity charges in our existing tariffs that the Company is requesting in this case. The Company is submitting both a final and redlined version of tariffs for each water district on a stand-alone basis.

Q. IS EWAZ ASKING FOR REVISED ESTABLISHMENT, RE-ESTABLISHMENT AND/OR RECONNECTION OF SERVICE CHARGES FOR THE DISTRICTS IN THIS RATE CASE?

A. Yes. The eleven water districts currently have varying levels of service charges. Commission Rule 14-2-403(D) authorizes a water utility to charge for the establishment, reestablishment, or reconnection of utility services. Should service be established during a period other than regular working hours at the customer's

request, the Commission has approved an after-hours charge for the service. The Company's average employees' wages and benefits do not vary from district to district and the time to complete the process is consistent among districts. Standardizing service charges in each district is appropriate to reflect the costs to provide these services. Table 1 below summarizes the charges currently authorized in each district.

Table 1. Current Miscellaneous Charges - All Water Districts

District	Establishment/ Reestablishment and/or Reconnection of Service		Reconnection of Service (delinquent)		After Hours Service Charge* (already included in Amt on left)	NSF Check Charge	Meter Reread	Meter Test	Late Penalty Payment (per month)	Deferred Payment Charge (per month)
	Regular	After Hours*	Regular	After Hours*						
Agua Fria	$30.00	$40.00				$10.00	$5.00	$30.00	1.50%	NA
Anthem	$60.00	$90.00				$25.00	$10.00	$30.00	1.50%	
Chaparral	$30.00	$80.00	$35.00	$85.00	$50.00	$25.00	$10.00	$35.00	1.50%	1.50%
Havasu	$25.00	$35.00				$25.00	$5.00	$10.00	1.50%	1.50%
Mohave	$35.00	$70.00	$35.00	$70.00	$35.00	$25.00	$25.00	$35.00	1.50%	1.50%
North Mohave	$25.00	$40.00	$40.00			$15.00	$15.00	$25.00	1.50%	1.50%
Paradise Valley	$35.00	$70.00	$35.00	$70.00	$35.00	$25.00	$25.00	$35.00	1.50%	1.50%
Sun City	$35.00	$70.00	$35.00	$70.00	$35.00	$25.00	$25.00	$35.00	1.50%	1.50%
Sun City West	$30.00	$40.00	$30.00	$40.00		$25.00	$5.00	$10.00	1.50%	
Tubac	$35.00	$70.00	$35.00	$70.00	$35.00	$25.00	$25.00	$35.00	1.50%	1.50%
Willow Valley	$35.00	$70.00	$35.00	$70.00	$35.00	$30.00	$30.00	$30.00	1.50%	1.50%

In Docket Number WS-01303A-14-0010,[1] the Commission approved uniform service charges for the Sun City, Mohave, Paradise Valley, and Tubac Water Districts and the Mohave Wastewater District. In Decision No. 76162 (June 28,

[1] Decision No. 75268 (September 8, 2015).

2017), the Commission extended those uniform service charges to the Arizona wastewater district.[2] EWAZ now requests that the Commission make the rest of the service charges consistent throughout EWAZ's remaining water districts so that all of the Company's customers are charged the same service charge for the same service rendered by the same company.

Q. PLEASE SUMMARIZE THE PROPOSED SERVICE CHARGES THE COMPANY IS REQUESTING.

A. EWAZ is proposing the following service charges for its eleven water districts. This aligns with service charges currently in place as authorized in Decision No. 75268 (September 8, 2015) for Mohave, Paradise Valley, Sun City and Tubac Water Districts, with the exception of the addition of the Automated Meter Opt Out fees. In order to accommodate customers who would prefer not to participate in the automated meter read program, the Company has proposed an associated establishment fee and monthly manual read fee that would be assessed to those customers.

SERVICE CHARGES

Establishment or Re-Establishment of Service (c)	$35.00
Reconnection of Service (Delinquent)	$35.00
Meter Test (if Correct)	$35.00
Meter Reread (If Correct)	$25.00
NSF Check	$25.00
Automated Meter Opt Outs	
Establishment Fee	$35.00
Monthly Manual Read Fee	$25.00

[2] Docket No. WS-01303A-16-0145.

Late Charge, per month	1.5%
Deferred Payment, per month	1.5%
Deposit Requirements (Residential)	(a)
Deposit Requirements (Non-Residential)	(a)
Deposit Interest	(a)
After Hours Service Charge (b)	$35.00

(a) Per Commission Rules (R14-2-403.B)
(b) After Hours Service charge: After regular working hours, on Saturdays, Sundays, or holidays if at the customer's request or for the customer's convenience.
(c) Monthly minimum times number of months disconnected from the system at the same location where the same customer had ordered a service disconnection within the preceding 12-month period.

In addition to the collection of regular rates, the utility will collect from its customers a proportionate share of any privilege, sales, use and franchise tax. Per Commission Rule 14-2-409(D)(5).

Q. IS THE COMPANY REQUESTING CHANGES IN ANY OF ITS OTHER SERVICE CHARGES OR MISCELLANEOUS FEES?

A. Yes. The Company is also seeking to revise its service line and meter installation charges, as well as its hook-up fees.

Q. ARE YOU THE COMPANY WITNESS SPONSORING THE REQUESTS TO CHANGE THE CURRENT SERVICE LINE AND METER INSTALLATION CHARGES AND HOOK-UP FEES?

A. No. Company witness, Mr. Andrew W. Brown, is sponsoring the Company's request for changes in the service line and meter installation charges and hook-up fees.

Q. ARE THESE PROPOSED CHANGES REFLECTED ON SCHEDULE H-6?

A. Yes. The Company is providing proposed tariffs for Miscellaneous Service Charges, Service Line and Meter Installation Charges, and Hook-Up Fees for each of the water districts.

Q. IN REVIEWING THE TARIFFS, THERE ARE SEVERAL NEW TARIFF SHEETS THAT HAVE BEEN INCLUDED IN THIS FILING. PLEASE SUMMARIZE THESE UPDATES.

A. These updates have been proposed in order to standardize the tariffs among all water districts. The Company has included standard tariffs for Common Facilities Hook-Up Fees, Curtailment, and Cross Connection or Backflow Tariffs.

Q. PLEASE DISCUSS THE COMMON FACILITIES HOOK-UP FEES TARIFF.

A. As previously stated, the Company is proposing to standardize tariffs among the water districts. In reviewing the current tariffs, some water districts had hook-up fee tariffs and others did not. For those water districts that did have a hook-up fee tariff, the wording was not always consistent. Therefore, the Company is proposing a Common Facilities Hook-up Fee Tariff that will be applicable to all water districts. This proposed tariff is based on the Common Facilities Hook-Up Fee Tariff that was approved in Decision No. 73145 (May 1, 2012) for the Agua Fria Water District with the exclusion of the White Tanks Surface Water Treatment Facility Component B.

Q. PLEASE DISCUSS THE CURTAILMENT TARIFF.

A. The Company's curtailment tariffs for each of its districts were filed on October 12, 2007 in compliance with Decision No. 67093 (June 30, 2004). These individual district tariffs were approved by the Commission Staff and became effective on October 24, 2007. The Company has since acquired several water districts. All water districts have the same curtailment plan, and therefore, the

previously approved Curtailment Tariff has been replicated and included in the tariffs for all water districts.

Q. PLEASE DISCUSS THE CROSS-CONNECTION OR BACKFLOW TARIFF.

A. The Company's Cross-Connection or Backflow Tariffs were administratively approved by the Commission on June 16, 2013. The Company has since acquired several water districts. All water districts have the same cross-connection or backflow plan, and therefore, the previously approved Cross-Connection or Backflow Tariff has been replicated and included in the tariffs for all water districts.

E COMPLIANCE ITEMS

Q. THE COMPANY CURRENTLY HAS COMPLIANCE ITEMS FOR ITS VARIOUS WATER DISTRICTS. PLEASE PROVIDE A SUMMARY OF THESE ITEMS.

A. Exhibit SLS-1 is a listing of compliance items that have been authorized in previous decisions for the Company's various water districts.

Q. IS THE COMPANY PROPOSING CHANGES TO ANY WATER COMPLIANCE ITEMS?

A. Yes, as outlined in Exhibit SLS-1, the Company has identified certain compliance requirements that should be (i) eliminated as no longer applicable; or (ii) rewritten to better capture the Commission's intent. The Company plans to work with Commission Staff to review these water compliance items to determine if they are still necessary or need to be updated. Some items may no longer be appropriate or

the need for them has ceased. Once the Company and Staff have completed this process, we will recommend an appropriate course of action for each item in Rebuttal Testimony. EWAZ has, however, recommended which items it believes are eligible for deletion. For example, the Company is recommending the elimination of the compliance items related to the White Tanks Hook Up Fee Credits and the White Tanks Non-Firm Treatment Service reporting items which were ordered in Decision No. 73145 dated May 1, 2012.

Q. WOULD A POTENTIAL REGIONAL CONSOLIDATION OF ANY WATER DISTRICTS PRESENT ANY ISSUES WITH THESE COMPLIANCE ITEMS IF THEY ARE NOT REVIEWED?

A. Potentially. That is why a review is necessary at this time. The Company wants to assure it continues to meet compliance reporting requirements. Currently, these compliance requirements are issued at individual water district levels. Some items may not be warranted at a consolidated level.

III. RATE BASE *PRO FORMA* ADJUSTMENTS

A. SLS – RB3: AIAC REFUNDS PAID POST TEST YEAR

Q. PLEASE EXPLAIN ADJUSTMENT SLS-RB3.

A. EWAZ is contractually committed to refunding certain Advances in Aid of Construction ("AIAC") beyond the test year ending on December 31, 2019. In an effort to reduce the effects of regulatory lag and the need for more frequent rate cases, the Company is adjusting its test year AIAC balance for known and measurable refunds to be paid in the period immediately following the 2019 test year and prior to the expected implementation of rates resulting from this

application. EWAZ expects a Decision in this case by early to mid-2021, which is after the time when the 2020 AIAC refunds will be paid. The Company has reduced the test year AIAC balance by the amount of AIAC refunds to be made in 2020. Refunds for 2020 are calculated based on refunds issued in 2019 and consistent with the term left on the associated contracts. The adjustment to rate base by district is summarized below:

Table 2. AIAC Refunds Paid Post Test Year

Water District	2020 AIAC Forecasted	Increase / (Decrease) to AIAC
Agua Fria Water	$ (1,252,850)	$ (1,252,850)
Anthem Water	(32,264)	(32,264)
Chaparral Water	-	-
Havasu Water	-	-
Mohave Water	(1,885)	(1,885)
North Mohave Water	-	-
Paradise Valley Water	(2,534)	(2,534)
Sun City Water	(43,641)	(43,641)
Sun City West Water	(3,375)	(3,375)
Tubac Water	-	-
Willow Valley Water	-	-
Total	$ (1,336,549)	$ (1,336,549)

B. SLS – RB4: REMOVAL OF CIAC NOT IN PLANT IN SERVICE

Q. PLEASE EXPLAIN ADJUSTMENT SLS-RB4.

A. Projects related to growth, service extensions to new customers, and CWIP at the end of the test year that will not be completed by December 31, 2020, may also have associated CIAC. The amount of CIAC for each project has been identified and removed from the application because there is no associated plant in service included in the Company's requested rate base. All CWIP that will not be

completed by December 31, 2020 has been removed from the Application. There is no RCN impact to this adjustment.

C. SLS – RB5: REMOVE PLANT ACQUISITION ADJUSTMENT

Q. PLEASE EXPLAIN ADJUSTMENT SLS-RB5.

A. This adjustment eliminates the plant acquisition adjustment from the calculation of rate base. When Arizona American Water Company was acquired by EUSA, an acquisition adjustment was recorded in the account records. This adjustment removes the test year acquisition adjustment balances for each district resulting from the purchase from Arizona American Water Company so there is a clean slate for the acquisition adjustments the Company is proposing in this case as identified below and more fully described in the Direct Testimony of Mr. Jon P. Boizelle.

Q. IS THE COMPANY PROPOSING RECOVERY OF ANY ACQUISITION PREMIUMS IN THIS CASE?

A. The Company is proposing recovery of the premiums associated with the acquisition of North Mohave and Willow Valley in rate base adjustment JPB-RB10. Please refer to the Direct Testimony of Mr. Jon P. Boizelle who is sponsoring that adjustment.

Table 3. Plant Acquisition Adjustment Removal

Water District	Increase / (Decrease) to Utility Plant Acquisition
Agua Fria Water	$ (3,999,499)
Anthem Water	(735,790)
Chaparral Water	(1,138,294)
Havasu Water	(154,766)
Mohave Water	(1,356,566)

North Mohave Water	(173,377)
Paradise Valley Water	(411,565)
Sun City Water	(2,042,155)
Sun City West Water	(1,255,675)
Tubac Water	(51,017)
Willow Valley Water	(126,441)
Total	$ (11,445,145)

D. SLS – RB7: REGULATORY ASSETS AND LIABILITIES

Q. PLEASE EXPLAIN ADJUSTMENT SLS-RB7.

A. This pro forma is comprised of two entries. The first entry removes the test year regulatory asset and regulatory liability balances for each district; the second entry adds back the previously-authorized regulatory assets and liabilities and requests for new deferral amounts for each district.

Q. WHY ARE YOU REMOVING THE TEST YEAR BALANCES FOR EACH DISTRICT?

A. By clearing out the test year balances we are starting with a clean slate. After all regulatory asset and regulatory liability test year balances are removed, each individual regulatory asset and liability is reviewed to determine if inclusion in Rate Base has been previously authorized by the Commission, and if it has not been previously authorized, whether a request for inclusion in Rate Base should be made as part of the Application. This makes it easier to identify all components within the regulatory accounts as we add them back one by one. Listed below are the individual items along with detailed descriptions which have been previously authorized or for which the Company is currently requesting approval.

1 DECISION NO. 75268 BALANCES

Q. PLEASE EXPLAIN WHAT WAS ORDERED IN DECISION NO. 75268.

A. Decision No. 75268 created regulatory assets and regulatory liabilities in response to anomalies in net book values of some of the Company's plant assets. The Commission reclassified accumulated depreciation balances that were in a debit position, and also to reclassify excess depreciation for accounts where the net book value of the asset was less than $0 (also referred to as credit balances). This *pro forma* adjustment adjusts rate base to include the current balance of those previously authorized regulatory assets and/or regulatory liabilities as of December 31, 2019. This adjustment applies to Mohave, Paradise Valley, Sun City, and Tubac only. The table below shows the impact of the adjustment for each district.

Table 4. Part 1 Decision No. 75268 Regulatory Asset Balances

Water District	Regulatory Asset	Reg Asset Amortization	Net Reg Asset
Agua Fria Water	-	-	-
Anthem Water	-	-	-
Chaparral Water	-	-	-
Havasu Water	-	-	-
Mohave Water	$ 277,843	$ (96,319)	$ 181,524
North Mohave Water	-	-	-
Paradise Valley Water	1,403,407	(486,514)	916,893
Sun City Water	1,064,777	(369,123)	695,654
Sun City West Water	-	-	-
Tubac Water	1,877	(651)	1,226
Willow Valley Water	-	-	-
Total	**$2,747,904**	**$ (952,607)**	**$1,795,297**

Table 5. Part 2 Decision No. 75268 Regulatory Liability Balances

Water District	Regulatory Liability	Reg Liab Amortization	Net Reg Liab
Agua Fria Water	-	-	-
Anthem Water	-	-	-
Chaparral Water	-	-	-
Havasu Water	-	-	-
Mohave Water	$ (756,439)	$ 262,232	$ (494,207)
North Mohave Water	-	-	-
Paradise Valley Water	(1,065,162)	369,256	(695,906)
Sun City Water	(2,453,039)	850,387	(1,602,652)
Sun City West Water	-	-	-
Tubac Water	(82,196)	28,495	(53,701)
Willow Valley Water	-	-	-
Total	**$ (4,356,836)**	**$ 1,510,370**	**$ (2,846,466)**

2 Y2K & DEPRECIATION STUDY

Q. PLEASE PROVIDE MORE DETAILS ON THIS ITEM.

A. This adjustment includes two regulatory assets that apply to Sun City, Sun City West, Agua Fria, Anthem, Mohave, Tubac, and Havasu only.

The first regulatory asset is the recovery of costs incurred to modify certain computer systems to be compliant with the four-digit year field associated with the year 2000 also referred to as "Y2K". The balance of $978,780 was approved to be amortized at $30,540 per year over the period July 2004 through July 2036. This was approved in Decision No. 67093. At the end of the test year, the unamortized balance is $505,500 applicable to water and wastewater districts and has been allocated to the affected water districts in this case using general metered customers as the allocation methodology. The amounts allocated to the water districts are shown in the Table 6.

The second regulatory asset is the recovery of costs associated with a 2002 Depreciation study done in compliance with FAS 71. Decision No. 67093 authorized the Company to amortize the cost of the study ($75,417.64) at 3.12 percent per year ($2,353 per year) over the period of July 2004 through July 2036. At the end of the test year, the unamortized balance is $38,962 applicable to water and wastewater districts and has been allocated to the affected water districts using general metered customers as the allocation methodology.

The table below lists the adjustment as it applies to each applicable district:

Table 6. Y2K and Depreciation Study Regulatory Deferral

Water District	Citizen's Water District Factors	Y2K - Net Reg Asset Balance	Depreciation Study - Net Reg Asset Balance	Total Incr/(Decr) to Reg Asset
		$ 505,500	$ 38,962	
Agua Fria Water	34.814%	175,986	13,564	189,551
Anthem Water	8.378%	42,351	3,264	45,615
Chaparral Water	0.000%	-	-	-
Havasu Water	1.782%	9,010	694	9,705
Mohave Water	9.361%	47,321	3,647	50,969
North Mohave Water	0.000%	-	-	-
Paradise Valley Water	0.000%	-	-	-
Sun City Water	12.726%	64,332	4,958	69,290
Sun City West Water	6.545%	33,084	2,550	35,634
Tubac Water	0.694%	3,508	270	3,778
Willow Valley Water	0.000%	-	-	-
Total		**$ 375,592**	**$ 28,949**	**$ 404,542**

3 WHITE TANKS – AGUA FRIA

Q. PLEASE PROVIDE THE BACKGROUND OF THIS REGULATORY ASSET.

A. Decision No. 73145 authorized a revenue requirement and rate base which included recovery of certain White Tanks Plant deferrals. There were no

disallowances of White Tanks utility plant in service in that Decision. The Decision approved a combined balance of White Tanks deferred depreciation and post in service allowance for funds used during construction ("AFUDC") debt net of accelerated amortization of White Tanks hook-up fees of $7,298,996. The Decision also approved a balance of White Tanks deferred post in service AFUDC equity of $7,531,975. The Decision approved an annual amortization rate for White Tanks related deferrals of approximately 3.54 percent, or $524,497 per year. Since July 1, 2012, amortizations have accumulated on the AFUDC DEBT balance totaling $1,935,967 and on the AFUDC EQUITY balance totaling $1,997,762, leaving the net balances of each at $5,363,029 and $5,534,213, respectively. This adjustment increases Agua Fria's OCRB by $10,897,241.

4 ACRM – HAVASU

Q. PLEASE EXPLAIN THIS REGULATORY ASSET.

A. This regulatory asset applies only to the Havasu water district. The United States Environmental Protection Agency ("EPA") reduced the maximum contaminant level ("mcl") of arsenic from 50 parts per billion ("ppb") to 10 ppb for all community water systems effective January 23, 2006. This new federal requirement required water companies to pursue additional treatment options where arsenic levels were not below the new mcl standard of 10 ppb.

For Havasu**,** Decision No. 70626 dated November 19, 2008, granted recovery for costs associated with arsenic treatment. Total O&M costs of $88,300 were booked as a Regulatory Asset along with accrued monthly AFUDC for the period November 2008 through November 2009 of $5,379 for a total of $93,679.

Decision No. 70626 (November 19, 2008) stated that AFUDC should be applied monthly to the outstanding compounded balance of the deferral until a rate is established upon completion of the pending rate case in the Havasu District. Decision No. 71410 (December 8, 2009) approved an amortization period of 12 years or 8.33 percent amortization rate. As of December 31, 2019, amortization of $78,717 has accumulated on the regulatory asset authorized in Decision No. 70626, leaving a regulatory asset balance of $14,963 for the Havasu water district.

5 PHOENIX INTERCONNECT – ANTHEM

Q. PLEASE PROVIDE DETAILS ON THIS REGULATORY ASSET.

A. This regulatory asset relates to the Anthem Wholesale Water Service Agreement Interconnection ("Anthem Interconnection"), which provides a redundant water supply from the City of Phoenix for peak and emergency water service to Anthem. The City of Phoenix has the capability to receive and treat Ak-Chin water at two separate locations on the Central Arizona Project ("CAP") canal system, and the Anthem Interconnection makes 2.5 million gallons per day available to EWAZ for distribution to the Anthem system. Decision No. 70372, dated June 13, 2008, granted the Company rate base treatment of the Anthem Interconnection along with a 25-year amortization period for the $5,000,000 in interconnection investment costs. The annual amortization amounts to $200,000 per year or $16,667 per month. As of December 31, 2019, amortization had accumulated in the amount of $2,316,713, leaving the regulatory asset balance at $2,683,287.

6 LONG TERM EFFLUENT – SUN CITY WEST

Q. PLEASE DISCUSS THIS ITEM.

A. In Decision No. 67093 the Commission allowed the Company to establish a regulatory asset with respect to the existing effluent storage credits that were acquired in connection with the acquisition of the underground storage facility pursuant to the terms of the Third Amendment to the Agreement regarding Sun City West. These credits allow the Company to continue groundwater withdrawals. The Commission allowed recovery of $413,745 over 32 years beginning July 1, 2004 and ending June 30, 2036. Annual amortization at 3.12 percent has accumulated amortizations of $200,136 as of December 31, 2019. This leaves the balance of the regulatory asset at $213,609.

7 ACQUISITION COSTS FOR MUMMY MOUNTAIN – PARADISE VALLEY

Q. PLEASE PROVIDE THE BACKGROUND OF THIS REGULATORY ASSET.

A. This item relates to costs associated with the Company's acquisition of the Mummy Mountain Water Company. The deferred costs related to legal, engineering and expert witnesses used in connection with this acquisition totaled $131,400. Decision No. 61307 (December 31, 1998) authorized the Company to recover these costs over 25 years, or 4 percent per year beginning February 1, 1999 and ending January 31, 2024. As of December 31, 2019, amortizations of $109,938 had accumulated, leaving the balance of the regulatory asset at $21,462.

8 FIRE FLOW – SUN CITY

Q. PLEASE PROVIDE MORE DETAILS ON THIS ITEM.

A. The Company had completed a fire flow study analyzing the need for fire flow capital improvements in Sun City. Decision No. 70351 (May 16, 2008) authorized

recovery of that study which cost $193,382 and approved an amortization rate of 3.06 percent per year, or $5,916 annually. As of December 31, 2019, amortization of $68,527 had accumulated, leaving the balance of the regulatory asset at $124,855.

9 DEFERRED TANK MAINTENANCE - ANTHEM

Q. PLEASE DISCUSS THIS ITEM.

A. The Company is proposing to defer $905,027 of tank maintenance expenses incurred in its Anthem water district in the test year and to amortize the balance over a ten-year period. The annual amortization of $90,503 will be expensed to account 5256 – Maintenance Expense. As of December 31, 2019, amortization of $90,503 had accumulated, leaving the balance of the regulatory asset at $814,524. Please refer to the Direct Testimony of Mr. Jon P. Boizelle for discussion on the amortization of this regulatory asset.

E. SLS – RB12: ADIT BALANCE

Q. PLEASE EXPLAIN ADJUSTMENT SLS-RB12.

A. The Company is including the Excess ADIT balance as of December 31, 2019, of $19,605,829 as a Regulatory Liability in rate base. The balance has been allocated to all districts based on the general metered customer count. Please refer to the Direct Testimony of Ms. Sheryl L. Hubbard for discussion of this adjustment.

IV. ADJUSTED OPERATING INCOME (ALL DISTRICTS)

Q. WHAT IS EWAZ'S ADJUSTED TEST YEAR OPERATING INCOME BY DISTRICT IN THIS PROCEEDING?

A. The following table summarizes Adjusted Test Year Operating Income for each water district seeking rate increases in this proceeding:

Table 7. Adjusted Test Year Operating Income - All Districts

Water District	Adjusted Test Year Operating Income
Agua Fria Water	$ 6,504,696
Anthem Water	3,283,896
Chaparral Water	2,728,739
Havasu Water	502,336
Mohave Water	1,537,526
North Mohave Water	92,343
Paradise Valley Water	2,703,413
Sun City Water	3,524,016
Sun City West Water	2,474,160
Tubac Water	(24,217)
Willow Valley Water	85,810
Total	**$ 23,412,718**

A OPERATING EXPENSES

Q. WHAT ARE EWAZ'S REQUESTED TOTAL OPERATING EXPENSES BY DISTRICT?

A. The following tables summarize Adjusted Test Year Operating Expenses for each water district.

Table 8. Adjusted Test Year Operating Expenses - All Districts

Water District	Adjusted Test Year Operating Expenses
Agua Fria Water	$ 34,198,785
Anthem Water	9,427,945
Chaparral Water	9,910,490
Havasu Water	2,618,586
Mohave Water	8,167,586
North Mohave Water	1,342,009
Paradise Valley Water	7,926,159
Sun City Water	12,302,624
Sun City West Water	6,911,197
Tubac Water	618,061
Willow Valley Water	979,666
Total	**$ 94,403,108**

V. INCOME STATEMENT *PRO FORMA* ADJUSTMENTS

Q. WHAT *PRO FORMA* INCOME STATEMENT ADJUSTMENTS IS EWAZ PROPOSING TO THE HISTORICAL TEST YEAR?

A. EWAZ has identified known and measurable changes to the historical test-year revenues and expenses. Listed below are those *pro forma* income statement adjustments that are common to all water districts except where noted.

JBP-IS1	Adjust Property Taxes to Reflect Proposed Revenues
SLS-IS2	Federal and State Income Taxes
SLS-IS3	Interest Synchronization with Rate Base
JPB-IS4	Bad Debt Expense
JPB-IS5	Annualization / Normalization of Revenues
JPB-IS6	Removal of General Disallowable Items
SLS-IS7	Annualize Labor and Labor Related Expenses
SLS-IS8	Removal of 10% of Performance Based Compensation
JPB-IS9	Postage Expense
JPB-IS10	Customer Care and Billing Services
JPB-IS11	Chemical Expense
JPB-IS12	CPI Adjustment
JPB-IS13	Annualize Depreciation Expense
JPB-IS14	Depreciation Expense on Post Test Year Plant
SLS-IS15	Annualize Amortization of CIAC
SLS-IS16	Adjust Corporate Allocations
JPB-IS17	Removal of Vactor Truck Depreciation
JPB-IS18	Water System Acquisition Amortization *(applicable to Willow Valley, Mohave and North Mohave only)*

	JPB-IS19	Remove Anthem Water Hauling Station Revenue and Expenses *(applicable to Anthem only)*
	SLS-IS20	Regulatory Asset/Liability Amortization
	SLS-IS21	ADIT Amortization
	JPB-IS22	Brooke Revenue / Expense Adjustment *(applicable to Havasu only)*
	JPB-IS23	Tank Maintenance
	JPB-IS24	Purchased Water Adjustment
	JPB-IS25	Power Cost Adjustment
	SLS-IS26	Insurance Other Than Group
	JPB-IS27	City of Phoenix Contract – Paradise Valley (*applicable to Paradise Valley only)*

Q. WHO IS SPONSORING THE *PRO FORMA* ADJUSTMENTS LISTED ABOVE?

A. I will sponsor and discuss in greater detail below those adjustments identified by SLS-ISXX, where XX represents a number. The remaining adjustments are sponsored by Mr. Jon P. Boizelle (JPB-ISXX) and are discussed in his Direct Testimony.

A. SLS – IS2: FEDERAL AND STATE INCOME TAXES

Q. WHAT IS ADJUSTMENT SLS-IS2 – FEDERAL AND STATE INCOME TAXES?

A. Adjustment SLS-IS2 is a *pro forma* adjustment that adjusts test-year income taxes to reflect the federal and state income tax effects of the *pro forma* adjustments included on Schedule C-2. The Company has prepared this adjustment and

applied its actual corporate federal income tax rate of 21.0% and an Arizona state income tax rate of 4.9%.[3]

B. SLS – IS3: INTEREST SYNCHRONIZATION WITH RATE BASE

Q. WHAT IS ADJUSTMENT SLS-IS3 – INTEREST SYNCHRONIZATION WITH RATE BASE?

A. Adjustment SLS-IS3 is a *pro forma* adjustment to synchronize the interest deduction in the test year income tax calculation that is a function of rate base and the weighted cost of debt. For ratemaking purposes, a utility's revenue requirement reflects the recovery of interest expense based on the weighted cost of debt in the capital structure. It is this interest expense that should be used for the interest deduction when calculating the tax expense. An Interest Synchronization adjustment is necessary to match the rate base used in determining revenue requirements with the proportionate part of the total amount of debt and equity used to determine the cost of capital. The amount of interest expense that customers contribute through their payment of water rates should be the same as the amount of interest expense deducted from revenues in calculating tax expense. Synchronizing the interest deduction for ratemaking with the interest deduction for tax purposes accomplishes this goal.

C. SLS – IS7: ANNUALIZE LABOR AND LABOR RELATED EXPENSES

Q. PLEASE EXPLAIN ADJUSTMENT SLS-IS7 – ANNUALIZE LABOR AND LABOR RELATED EXPENSES.

[3] State of Arizona Department of Revenue website.

A. This *pro forma* adjustment annualizes the labor charges at the end of the test year and calculates the payroll tax expense associated with the change in payroll expense based on employees employed by EWAZ at the end of the test year. This adjustment recognizes actual labor rates in effect as of the filing date for this rate application and increases them by 3% to reflect labor costs at the time rates in this case are expected to go into effect. This adjustment also annualizes the various employee benefit-related items including group insurance, 401(k), and pension expense. Group Insurance includes premiums for life insurance, medical insurance, dental insurance, long-term disability insurance and short-term disability. A portion of this adjustment segregates all group insurance items and applies the current 2020 premium cost per benefit for each employee. Also included in this *pro forma* adjustment is the annualization of the Company's contribution to its employees' 401(k) retirement savings program. This consists of the Company's contribution of 5.25% of the employees' pay as well as the Company's 100% matching of the first 3% of the employee contribution and an additional 50% matching of employee contributions greater than 3% up to 5%. Finally, employees hired before January 1, 2006, are eligible for a defined-benefit pension. This adjustment also annualizes the increase in the defined-benefit pension costs based on the 2020 funding liability based on an actuarial determination.

Table 9. Labor Expenses

Water District	Increase / (Decrease) in Labor Expense	Increase / (Decrease) in Group Ins & Other Benefits	Increase / (Decrease) in General Taxes - Other	Increase / (Decrease) in Labor Related Expense
Agua Fria Water	$ 1,327,648	$ 128,306	$ 14,172	$ 1,470,126
Anthem Water	394,381	114,011	(18,827)	489,565
Chaparral Water	400,226	80,144	(7,926)	472,444
Havasu Water	(10,598)	(10,369)	(9,650)	(30,617)
Mohave Water	339,785	133,428	(55,891)	417,322
North Mohave Water	52,682	6,969	3,795	63,446
Paradise Valley Water	318,207	126,999	(19,092)	426,114
Sun City Water	435,540	149,358	(87,588)	497,310
Sun City West Water	222,350	62,746	(20,301)	264,795
Tubac Water	16,975	21,095	(1,669)	36,401
Willow Valley Water	37,354	10,923	(3,289)	44,988
Total	$ 3,534,550	$ 823,610	$ (206,266)	$ 4,151,894

D. SLS – IS8: REMOVAL OF 10% OF PERFORMANCE BASED COMPENSATION

Q. PLEASE EXPLAIN ADJUSTMENT SLS-IS8 – REMOVAL OF 10% OF PERFORMANCE BASED COMPENSATION.

A. This *pro forma* adjustment removes the financial component of the Performance Based Compensation Plan for the test year. The financial component represents 10% of the target for the Performance Based Compensation payout per employee. Although the Commission established interim rates by essentially removing 50% of the incentive pay in Decision No. 77147, the Company believes that its total compensation less the 10% financial component of the incentive compensation is reasonable in this case as discussed in greater detail in the Direct Testimony of Mr. Thomas A. Loquvam.

Removing the 10% that is based on financial performance decreases the labor expense for each district as shown below in Table 10:

Table 10. Removal of 10% of Performance Based Compensation

Water District	Total Decrease to Labor Expense
Agua Fria Water	$ (62,810)
Anthem Water	(15,312)
Chaparral Water	(17,507)
Havasu Water	(3,587)
Mohave Water	(18,600)
North Mohave Water	(2,193)
Paradise Valley Water	(11,790)
Sun City Water	(23,711)
Sun City West Water	(11,660)
Tubac Water	(1,384)
Willow Valley Water	(2,142)
Total	$ (170,696)

E. SLS – IS15 ANNUALIZE AMORTIZATION ON CIAC

Q. PLEASE EXPLAIN ADJUSTMENT SLS-IS15.

A. Amortization of gross Contributions in Aid of Construction ("CIAC") as of December 31, 2019 is annualized for the year based on the balance at test year end in this *pro forma* adjustment.

F. SLS – IS16: ADJUST CORPORATE ALLOCATIONS

Q. PLEASE EXPLAIN ADJUSTMENT SLS-IS16.

A. EWAZ relies on a shared services model in which its corporate affiliates (including EPCOR Utilities, Inc., or "EUI") provide services, such as human resources, legal services, risk management, accounting, Information Technology, supply chain management, health, safety, and environment, and Treasury services, which EWAZ would otherwise need to self-supply. By being able to rely on shared services, EWAZ receives quality, required services at a significant discount

to the benefit of customers. In the ratemaking context, the cost of these shared services appear as Corporate Allocations. Despite being valuable services at a discount, Corporate Allocations nonetheless contain certain costs that would otherwise not be recoverable from EWAZ customers, such as donations and advertising. This adjustment removes those unrecoverable items, which include costs associated with government relations and community relations, the 10% financial component associated with EUI's Performance Based Compensation Plan, Membership Dues & Professional Fees, Recognition, Meals, Training, and Promotion.

This adjustment also reflects known and measurable changes for those allocated costs that remain after the removal described above. Specifically, the labor costs included in the allocated costs will increase by 3% in both 2020 and 2021 (the year in which rates from this proceeding will be put into effect). As a result, this adjustment reflects that known and measurable change as shown below in Table 11.

Table 11. Corporate Allocations

Water District	Adjusted Corporate Allocations	Test Year Corporate Allocations	Increase / (Decrease) to Corporate Allocations
Agua Fria Water	$ 967,513	$ 941,193	$ 26,320
Anthem Water	232,235	225,918	6,317
Chaparral Water	249,570	242,781	6,789
Havasu Water	49,527	48,180	1,347
Mohave Water	261,677	254,558	7,119
North Mohave Water	33,488	32,577	911
Paradise Valley Water	160,936	156,558	4,378
Sun City Water	356,019	346,334	9,685
Sun City West Water	183,579	178,585	4,994
Tubac Water	19,265	18,741	524
Willow Valley Water	29,983	29,168	815
Total	$ 2,543,792	$ 2,474,593	$ 69,199

G. SLS – IS20: REGULATORY ASSET/LIABILITY AMORTIZATION

Q. PLEASE EXPLAIN ADJUSTMENT SLS-IS20.

A. This *pro forma* adjustment is comprised of two entries. The first entry clears out the test year regulatory expense balance for each district; the second entry adds back the authorized and requested amounts for each district.

Table 12. Regulatory Asset/Liability Amortization

Water District	Clear out Test Year Regulatory Expense	Annual Amortization Reg Asset	Annual Amortization Reg Liability	Increase / (Decrease) to Depreciation Expense
Agua Fria Water	$ (13,421)	$ 535,948	$ -	$ 522,527
Anthem Water	(3,221)	202,756	-	199,535
Chaparral Water	(3,462)	-	-	(3,462)
Havasu Water	(687)	8,393	-	7,706
Mohave Water	(3,630)	25,306	(60,515)	(38,839)
North Mohave Water	(465)	-	-	(465)
Paradise Valley Water	(2,232)	117,529	(85,213)	30,084
Sun City Water	(4,938)	95,284	(196,243)	(105,897)
Sun City West Water	(2,546)	15,065	-	12,519
Tubac Water	(267)	378	(6,576)	(6,465)
Willow Valley Water	(416)	-	-	(416)
Total	$ (35,285)	$ 1,000,659	$ (348,547)	$ 616,827

Q. WHY ARE YOU CLEARING OUT THE TEST YEAR BALANCE FOR EACH DISTRICT?

A. By clearing out the test year balances we are starting with a clean slate. After all regulatory expense test year balances are removed, each individual regulatory asset and liability and its amortization is reviewed to determine if it has been previously authorized by the Commission. This makes it easier to identify all components of regulatory expense as we add them back one by one. Listed below are the individual amortization items along with detailed descriptions which have been previously authorized.

Q. HOW ARE THE ADJUSTMENTS IN THIS SECTION DIFFERENT THAN THE RELATED RATE BASE ADJUSTMENTS DISCUSSED ABOVE?

A. This section addresses only the *amortization* of approved regulatory accounts. I discussed the regulatory asset or regulatory liability balances in the previous section of my Direct Testimony when addressing rate base adjustment SLS-RB7 (specifically at Section III.7 of my Direct Testimony).

1 DECISION NO. 75268 AMORTIZATION

Q. PLEASE EXPLAIN DECISION NO. 75268 AMORTIZATION?

A. In Decision No. 75268, the Commission adopted adjustments to reclassify accumulated depreciation balances that were in a debit position, and also to reclassify excess depreciation that caused the net book value of the asset to be less than $0 (also referred to as credit balances). Rate Base adjustment SLS-RB7 records the Regulatory Asset and Regulatory Liabilities authorized in that Decision. The Decision also authorized an amortization rate of 8% beginning September 1, 2015.

The amortization of those reclassifications to regulatory assets and liabilities, which is applicable only to Mohave, Paradise Valley, Sun City, and Tubac, is reflected in this *pro forma* adjustment.

Table 13. Decision No. 75268 Amortization

Water District	Annual Amortization Reg Asset	Annual Amortization Reg Liability	Increase / (Decrease) in Depreciation Expense
Agua Fria Water			
Anthem Water			
Chaparral Water			
Havasu Water			
Mohave Water	$ 22,227	$ (60,515)	$ (38,288)

North Mohave Water			
Paradise Valley Water	112,273	(85,213)	27,060
Sun City Water	85,182	(196,243)	(111,061)
Sun City West Water			
Tubac Water	150	(6,576)	(6,426)
Willow Valley Water			
Total	**$219,832**	**$(348,547)**	**$(128,715)**

2 Y2K & DEPRECIATION STUDY

Q. PLEASE PROVIDE MORE DETAILS ON THIS ITEM.

A. This adjustment records the amortization of a component of rate base adjustment SLS-RB7 which records two corporate regulatory assets for Y2K Costs and the 2002 Depreciation Study. These regulatory assets apply only to Sun City, Sun City West, Agua Fria, Anthem, Mohave, Tubac and Havasu.

Q. HOW ARE THESE TWO REGULATORY ASSETS BEING AMORTIZED?

A. Decision No. 67093 (June 30, 2004) authorized the amortization of $978,780 of Y2K costs at $2,545 per month over the period from July 2004 through July 2036. Decision No. 67093 further authorized the Company to amortize the cost of a depreciation study totaling $75,417.64, at 3.12% per year or $196 per month over a period from July 2004 through July 2036. These annual amortization amounts are then allocated to each of the applicable districts based on the 4-factor methodology.

Table 14. Y2K & Depreciation Study Amortization

Water District	Annual Amortization - Y2K Costs	Annual Amortization - Depreciation Study	Increase / (Decrease) in Expense
Agua Fria Water	$ 10,632	$ 819	$ 11,451
Anthem Water	2,559	197	2,756
Chaparral Water			
Havasu Water	544	42	586
Mohave Water	2,859	220	3,079
North Mohave Water			
Paradise Valley Water			

Sun City Water	3,887	299	4,186
Sun City West Water	1,999	154	2,153
Tubac Water	212	16	228
Willow Valley Water			
Total	**$ 22,692**	**$ 1,747**	**$ 24,439**

3 WHITE TANKS DEFERRALS – AGUA FRIA

Q. HOW IS THE AGUA FRIA WHITE TANKS REGULATORY ASSET BEING AMORTIZED?

A. Decision No. 73145 approved an annual amortization rate for the White Tanks related deferrals of 3.5365%, or $524,497 per year.

4 ACRM – HAVASU

Q. HOW IS THE ACRM REGULATORY ASSET BEING AMORTIZED?

A. For the Havasu water district, Decision No. 71410 authorized an amortization of arsenic treatment related expenditures totaling $93,679 over a period of 12 years, or an 8.33% amortization rate, resulting in an annual amortization of $7,807.

5 PHOENIX INTERCONNECT – ANTHEM

Q. HOW IS THE PHOENIX INTERCONNECT REGULATORY ASSET BEING AMORTIZED?

A. Decision No. 70372 (June 13, 2008) authorized rate base treatment of the $5 million of interconnection investment along with a 25-year amortization period. The annual amortization amounts to $200,000 per year.

6 LONG TERM EFFLUENT – SUN CITY WEST

Q. HOW IS THE LONG TERM EFFLUENT REGULATORY ASSET BEING AMORTIZED?

A. Decision No. 67093 allowed the Company to amortize total long-term effluent costs of $413,745 over a 32-year period, or $12,912 annually.

7 ACQUISITION COSTS FOR MUMMY MOUNTAIN – PARADISE VALLEY

Q. HOW IS THE ACQUISITION COST FOR THE MUMMY MOUNTAIN REGULATORY ASSET BEING AMORTIZED?

A. Decision No. 61307 granted the Company approval to recover $131,400 over 25 years, or $5,256 annually.

8 FIRE FLOW – SUN CITY

Q. HOW IS THE FIRE FLOW REGULATORY ASSET BEING AMORTIZED?

A. Decision No. 70351 authorized recovery of $193,382 in fire flow costs at an amortization rate of 3.06% per year, or $5,916 annually.

H. SLS – IS21: ADIT AMORTIZATION

Q. PLEASE EXPLAIN ADJUSTMENT SLS-IS21.

A. On January 1, 2018, as a result of the 2017 Tax Cuts and Jobs Act, the Company reclassified Accumulated Deferred Income Taxes ("ADIT") that exceeded the liability recomputed at the new corporate income tax rate of 21 percent. The balance of ($21,310,684) also referred to as Excess ADIT is being amortized over the average remaining life of the assets that gave rise to the ADIT, or a 25 year period. This annual amortization of ($852,427) is then allocated to districts based on the general metered customer count. Please see the Direct Testimony of Ms. Sheryl L. Hubbard who provides further details regarding this adjustment.

I. SLS – IS26: INSURANCE OTHER THAN GROUP

Q. PLEASE EXPLAIN ADJUSTMENT SLS-IS26.

A. The Insurance Other Than Group adjustment consists of 15 separate components. Annually, the Company reports certain business statistics to its insuring agencies including Revenues, Plant Balances, Employee Count, Total Payroll and Vehicle Counts. Each of the 15 components is adjusted annually based on these statistics. The primary components are property insurance, excess liability, umbrella liability, auto and worker's compensation. The Company has updated the test year expense to the 2020 premium levels. This adjustment by district is summarized in Table 15 below.

Table 15. Insurance Other Than Group

Water District	Increase / (Decrease) to Insurance Other Than Group
Agua Fria Water	$ 80,605
Anthem Water	(627)
Chaparral Water	41,527
Havasu Water	(10,270)
Mohave Water	(2,180)
North Mohave Water	(1,273)
Paradise Valley Water	(23,352)
Sun City Water	52,764
Sun City West Water	22,908
Tubac Water	(7,306)
Willow Valley Water	(4,312)
Total	$ 148,483

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

EXHIBIT SLS-1

Decision No.	Decision Date	Order Requirement Wording	District(s)	Frequency	Proposed Action
77147	4/16/2019	Company shall file with Docket Control, by March 1st each year, an annual report detailing the number of participants (LIP) from the previous calendar year, the total amounts of discounts given, direct and indirect costs of the program, and provide updated gross annual income guidelines from the government.	AF, AN, CCWC, HA, MO, NM, PV, SC, SCW, TU, WV	Annual	Revise
77147	4/16/2019	EPCOR will file annually with docket control a report outlining the total number of program participants, the total of all credits provided by the program, and the total of any program administration costs. The first report will be based on a 12 month period of May 1, 2019 through April 30, 2020 to be consistent with the effective date of Decision 77147.	AF, AN, CCWC, HA, MO, NM, PV, SC, SCW, TU, WV	Annual	Revise
73145	5/1/2012	White Tanks HUF Credit. Credits would commence in Year 2 of the phase in and continue each subsequent year until new rates are approved.	Agua Fria Water	Annual	**Delete**
73145	5/1/2012	Customer Credit for Sales of White Tanks Plant Non-Firm Treatment Services. Credits will commence in Year 2 of the phase in period based on 18 months available sales data for non-firm treatment services based revenue. In Year 3, of the phase in and each subsequent year until new rates are approved, the credit will be based on sales of non-firm treatment services accruing in the prior 12 months using the same formula.	Agua Fria Water	Annual	**Delete**
64746	4/17/2002	The HUF is approved, pending AAW filing an annual report on AF HUF (6). 3 separate conditions must be met for the order #1 - all HUF collected be placed in a separate interest bearing account and be used only for installation of backbone off-site facilities #2 - all HUF be considered non-refundable contributions #3 - AAQ must file annual reports due by February 28 of each year and the report disclose: the name of each entity paying a HUF, the amount of the HUF paid by each entity; a description of the utility plan constructed with HUF funds; the balance of the HUF account; interest earned on the HUF account; and any other information required by staff	Agua Fria Water	Annual	NA
69396	3/22/2007	Az Am shall file, by July 1st of each year subsequent to any year in which it collects surcharges under an ACRM, a report with Docket Control showing the Company's ending capital structure (equity, long-term debt, and short term debt) by month for the prior year.	Paradise Valley	Annual	**Delete**
77147	4/16/2019	The Company will annually file with docket control a report outlining the total number of program participants, the total of all credits provided by the program in the given year, a total of all deferred costs over the course of the program, and the total of any program administration costs. The first report will be based on the period from July 1, 2019 to December 31, 2019. The reporting of all subsequent filings will be on a calendar year basis. The report will be filed within 90 days of the reporting period, March 31, and annually thereafter.	All Water Districts	Annual	Revise
76463	11/17/2017	Ordered that 30 days after the annual water station report is docketed the tariff be adjusted as necessary, through true-up calculations, to an amount that allows the Company to break-even on the water station.	Anthem	One Time	NA
76463	11/17/2017	EPCOR shall within six months after the water station had started serving customers and annually thereafter until such time as the water station can be evaluated within the context of a full rate case, file with Docket Control, a report for Staff review that includes at a minimum: total revenues collected from the water station, the total volume of water sold, and all actual operation expenses operated paid by the EPCOR for the water station. The Company should make available on request any and all supporting documentation.	Anthem	Annual	NA
74568 &	6/20/2014	The Company shall file its first surcharge request by January 31, 2016 to be effective on March 1, 2016. On or before January 31st of each year thereafter	CCWC	Annual	Revise
68305	11/14/2005	File annual report summarizing the off site facilities hook up fees collected during the prior calendar year.	CCWC	Annual	Revise
74860		Once a SIB Surcharge is implemented, the Company must file annually to true up its SIB Surcharge collections over the preceding twelve months with the SIB Authorized Revenue for that period and establish a surcharge or credit to true-up over or under collections, regardless of whether it seeks a new surcharge. The filing dates for these annual true-ups shall be as established in the Commission's Decision approving the SIB surcharge.	CCWC	Annual	Delete
74860 & 74568	12/18/2014 & 6/20/14	Progress Reports - Once a SIB is approved in a decision, the Company must file with Docket Control semi-annual status reports delineating the status of all SIB Eligible Plant, on a project by project basis as listed in the latest Commission approved SIB Plant Table I. Starting 6 months after the decision and every 6 months thereafter. The initial semi-annual status report shall include only those projects from the initial SIB Plant Table I.	CCWC	Semi-Annual	**Delete**
68310	11/15/02	For the Havasu District, AAW, shall file with Docket Control by January 31st of each year, an annual calendar year status report, until the Arsenic Impact Fee Tariff is no longer in effect. The status report shall contain a list of all customers that have paid the AIF, the amount each customer has paid, the amount of money spent from the AIF, and a list of all facilities that have been installed with funds from the AIF Tariff during the 12-month period.	Havasu W	Annual	Revise
75268	42255	With respect to the Paradise Valley tank maintenance program, EPCOR shall : file annual reports regarding the tank maintenance costs; including a true-up for over- or under- recovery of actual costs compared to projections; and prepare a Plan of Administration, in a form acceptable to Staff, within 60 days of the effective date of this Decision.	Paradise Valley	Annual	NA
61831	07/20/99	…Calculate revised PV CAP Expense Recovery Surcharge based on customer count at Dec 1 of previous year. This annual surcharge rate will appear on customer's bills in January. Revised tariffs to be filed.	Paradise Valley W	Annual	**Delete**

Decision No.	Decision Date	Order Requirement Wording	District(s)	Frequency	Proposed Action
75268	9/8/2015	Company shall file with docket control an analysis of the actual impact on the Company's Purchased Power Costs of Commission authorized rate changes in the approved tariff for any ACC-regulated electric service provider supplying retail service to the Company. The first report will be based on the period July 1, 2015 through June 30, 2016 to be consistent with the Test Year approved in the decision. This report will be filed within 60 days of the end of the reporting period, August 30, 2016 and then annually thereafter. The adjustor will be effective 30 days after the annual filing, October 1, 2016, and then annually thereafter.	PV, SC, TU, MO & MOWW	Annual	NA
60172	5/7/1998	File an annual report with Staff and RUCO to account for the expenditures made for conservation education.	Sun Cities, AF	Annual	**Delete**
72046	12/10/2010	Company shall file its annual revision of the GSF surcharge with the Commission no later than January 31 of the future year beginning in 2012, with an effective date of the following March 1. Filing shall continue until further order of the Commission	Sun City	Annual	Revise
72229	3/9/2011	AAW will file an annual report detailing the number of participants for the previous calendar year, the discounts given to participants, direct and indirect costs associated with the program, collections made from the high block rate used to fund the program. and provide updated gross annual income guidelines as necessary from the federal government. The report shall include the balance of the low income program (i.e., funding amount from high block usage less checks sent to customers and direct and indirect costs associated with the program) and shall include all supporting documentation.	Sun City W	Annual	Revise
67093	6/30/2004	EPCOR shall work in conjunction with the fire departments serving Youngtown and Sun City to test the fire hydrants in Youngtown and Sun City in order to determine if those hydrants are operational. The Company shall submit a progress report on April 1st of each year to the Commission.	Sun City West W	Annual	**Delete**
68310	11/15/2002	AAW shall file, by April 1st of each year it collects surcharges ($403121) under ACRM, a report with the Utilities Division Director showing the Company's ending capital structure by month for the prior year. SEE NUMBER 91	Tubac	Annual	NA
75268	9/8/2015	In the event EPCOR placed any plant in service in the accounts referenced in Footnote 1 of Exhibits A through E, attached hereto, the Company is directed to file an application proposing a depreciation rate for such accounts, and Staff shall prepare a Recommended Order for the Commission's consideration that proposes an appropriate depreciation rate for those accounts to be effective beginning with the plan in-service date.	Tubac, PV, Sun City, Mohave W & Mohave WW	Qrtrly	NA
74364	2/26/2014	Willow Valley Water will be required to submit annual affidavits, signed by the highest officer, attesting that signatory entities was compliant with the terms of the Settlement Agreement (Docket No. 02450A-12-0312) for the prior calendar year. The affidavits should be filed beginning February 1, 2015 and should continue to be filed by February 1 each successive year for the prior calendar year, until further order of the Commission.	Willow Valley	Annual	**Delete**
74364	8/12/2013	Per Settlement Agreement paragraph 7.3 Along with Annual affidavit on item 308 above, company shall also file an annual Hookup Fee Report as outlined in the tariffs. The company shall submit a calendar year Off-Site Hookup Fee Status Report each January 31 to Docket Control for the prior 12 month period, beginning January 31, 2015, until the hook-up fee tariff is no longer in effect. This report shall contain a list of all customers that have paid the hook-up fee tariff, 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.	Willow Valley	Annual	**Delete**
74364	8/12/2013	Per Settlement Agreement paragraph 9.1 (Willow Valley Water) agrees to file the water loss reports recommended in the Direct Testimony of Staff witness Mr. Liu.	Willow Valley	Annual	**Delete**
74364	8/12/2013	Per Settlement Agreement paragraph 7.3 Along with Annual affidavit on item 308 above Chief Executive Officer or Chief Financial Officer shall be required to file an affidavit annually which states that conditions of paragraph 7.3 have been met.	Willow Valley	Annual	**Delete**
72440	6/27/2011	Willow Valley file with Docket Control, by April 30 each year, a report of the activities of the Low Income Relief Program for the preceding calendar year. The report shall include but not be limited to an annual ACAA report, total LIRP funds collected, and the total Company match. ----- May be effected by consolidation.	Willow Valley	Annual	Revise
72440	6/27/2011	Willow Valley file with Docket Control, by November 30 each year, the computation for the monthly customer surcharge for the Low Income Relief Program (LIRP) to become effective the following January 1.	Willow Valley	Annual	Revise
71878	9/15/2010	Submit a Quarterly volumetric threshold rebate report. Volumetric rebate design was approved in Decision No. 71878 and was carried forward by Decision No. 74364. (Last Report was filed March 15, 2016). The quarterly volumetric threshold rebate reports shall indicate, by month, the number of invoices prepared, the number of those invoices with consumption below the rebate threshold and thus entitled to the volumetric rebate, and the dollar amount of rebates provided to customers on those invoices.	Willow Valley	Qrtrly	**Delete**

EPCOR Water Arizona Inc.
Docket No. WS-01303A-20-XXXX
Test Year Ended December 31, 2019

EPCOR Direct Testimony

Mr. Dylan W. D'Ascendis

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

ROBERT "BOB" BURNS, Chairman

BOYD DUNN

SANDRA D. KENNEDY

JUSTIN OLSON

LEA MÁRQUEZ PETERSON

IN THE MATTER OF THE APPLICATION OF EPCOR WATER ARIZONA INC. FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND INCREASES/DECREASES IN ITS RATES AND CHARGES BASED THEREON FOR UTILITY SERVICE BY ITS AGUA FRIA, ANTHEM, CHAPARRAL, HAVASU, MOHAVE, NORTH MOHAVE, PARADISE VALLEY, SUN CITY, SUN CITY WEST, TUBAC, AND WILLOW VALLEY WATER DISTRICTS AND FOR CONSIDERATION OF CONSOLIDATION PROPOSALS	DOCKET NO: WS-01303A-20-____

DIRECT TESTIMONY
OF
DYLAN W. D'ASCENDIS, CRRA, CVA
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

DIRECT TESTIMONY
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EXECUTIVE SUMMARY

EPCOR Water Arizona Inc.'s Cost of Common Equity and Overall Required Rate of Return

Mr. D'Ascendis concludes that EPCOR Water Arizona Inc.'s ("EWAZ" or "Company") cost of equity is 10.24% and its overall weighted average cost of capital ("WACC") is 7.32%. EWAZ's overall required WACC is based on its capital structure consisting of 49.66% long-term debt and 50.34% common equity as testified to by Company Witness Sheryl L. Hubbard.

Mr. D'Ascendis' cost of equity recommendation is based on the results of his Discounted Cash Flow, Risk Premium Model, and Capital Asset Pricing Model analyses applied to a Utility Proxy Group, comprised of seven water utilities as well as a Non-Price Regulated Proxy Group, comprised of 17 companies. The indicated common equity cost rate of 9.94%, based solely on the Utility Proxy Group, must be adjusted upward by 0.05% for credit risk and 0.25% to reflect EWAZ's higher business risk relative to the Utility Proxy Group, which will be described in detail below. Adding the required credit risk adjustment of 0.05% and the required unique business risk adjustment of 0.25% to the 9.94% indicated cost of common equity applicable to the Utility Proxy Group, results in a common equity cost rate of 10.24% applicable to EWAZ, which forms the basis of Mr. D'Ascendis' recommendation.

Mr. D'Ascendis also calculates a return for EWAZ's fair value increment of 0.93%, based on measures of the nominal risk-free rate and inflation.

I. Introduction

Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.

A. My name is Dylan W. D'Ascendis. I am a Director at ScottMadden, Inc. My business address is 1900 West Park Drive, Suite 250, Westborough, MA, 01581. 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 19 state regulatory commissions in the United States and one American Arbitration Association panel on rate of return issues including, but not limited to, common equity cost rate, rate of return, capital structure issues, relative investment risk, and credit quality issues.

On behalf of the American Gas Association ("AGA"), I calculate the AGA Gas Index, which serves as the benchmark against which the performance of the American Gas Index Fund ("AGIF") is measured monthly. The AGA 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 AGA.

I am a member of the Society of Utility and Regulatory Financial Analysts ("SURFA"). In 2011, I was awarded the professional designation Certified Rate of Return Analyst ("CRRA") by SURFA, which is based on education, experience, and the successful completion of a comprehensive written examination.

I am also a member of the National Association of Certified Valuation Analysts and was awarded the professional designation Certified Valuation Analyst in 2015.

I am a graduate of the University of Pennsylvania, where I received a Bachelor of Arts degree in Economic History. I have also received a Master of Business Administration with high honors and concentrations in Finance and International Business from Rutgers University.

The details of my educational background and expert witness appearances are shown in Appendix A.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to recommend the appropriate return on common equity, which the Company should be afforded the opportunity to earn on its fair value rate base.

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 a common equity cost rate of 10.24% on the common equity portion of its jurisdictional rate base. My recommended common equity cost rate applied to the Company requested capital structure,[1] which consists of 49.66% long-term debt at an embedded cost rate of 4.38% and 50.34% common equity at December 31, 2019 results in an overall rate of return of 7.32%, as summarized on page 1 of Exhibit DWD-1 and in Table 1 below:

[1] As testified to by Company Witness Sheryl Hubbard.

Table 1:
Summary of the Weighted Average Cost of Capital

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	49.66%	4.38%	2.17%
Common Equity	50.34%	10.24%	5.15%
Total	100.00%		7.32%

Q. DOES YOUR RECOMMENDATION REFLECT THE RECENT VOLATILITY IN FINANCIAL MARKETS DUE TO CORONAVIRUS ("COVID-19")?

A. No. My analysis was performed based on the data and information available to me on January 31, 2020, prior to the recent market volatility due to COVID-19. Audited financial data is not yet available for the most recent quarter and thus I cannot update my analysis to reflect recent developments in the markets. However, even if I could, I would say that calculating an ROE for a utility based upon a single quarter's financial metrics during a global pandemic, with rapidly changing circumstances and evolving government relief efforts, is not reasonable or prudent. However, I reserve the right to update my analysis in the rebuttal phase of this proceeding as additional information becomes apparent. I would also note that during times of sustained instability such as these, states need strong, reliable utilities that can withstand the shocks of ongoing stresses in the financial markets, particularly given the essential services that utilities provide. If anything, the current pandemic is a reason to err on the side of higher ROEs to ensure safe and reliable infrastructure for the health and benefit of utility customers.

Q. HAVE YOU PREPARED EXHIBITS THAT SUPPORT YOUR RECOMMENDED COMMON EQUITY COST RATE?

A. Yes. They are Exhibits DWD-1 through DWD-9.

II. Summary

Q. PLEASE SUMMARIZE YOUR RECOMMENDED COMMON EQUITY COST RATE.

A. My recommended common equity cost rate of 10.24% is summarized on page 2 of Exhibit DWD-1. Because EWAZ'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 with relatively similar, but not necessarily identical risk, *i.e.*, a proxy group, for insight into a recommended common equity cost rate applicable to EWAZ. Using water companies of relatively similar risk as proxies is consistent with the principle of fair and reasonable rates of return required by the *Simms*[2] case, adding reliability to the informed expert judgment necessary to arrive at a recommended common equity cost rate.

However, no proxy is completely identical in risk to any single entity. Accordingly, a comparison of relative risk between EWAZ and a proxy group of publicly traded water utilities ("Utility Proxy Group"), discussed in further detail later in this testimony, must be made to determine whether any adjustments to the Utility Proxy Group's indicated common equity cost rate are justified or necessary.

[2] *Simms v. Round Valley Light and Power Company*, 294 P.2d 378 (Ariz. 1956).

In determining my recommended common equity cost rate, I applied several well-recognized cost of common equity models (*i.e.,* Discounted Cash Flow ("DCF"), Risk Premium Model ("RPM"), and Capital Asset Pricing Model ("CAPM")) to the market data of a Utility Proxy Group whose selection will also be discussed below. In addition, I applied the DCF model, RPM, and CAPM to a proxy group of non-price regulated companies comparable in total risk to the Utility Proxy Group ("Non-Price Regulated Proxy Group"). The results derived from each are summarized as follows:

Table 2:
Summary of Common Equity Cost Rate

	Utility Proxy Group
Discounted Cash Flow Model	9.42%
Risk Premium Model	10.44%
Capital Asset Pricing Model	9.05%
Cost of Equity Models Applied to Non-Price Regulated Proxy Group	10.92%
Indicated Common Equity Cost Rate before Adjustment	9.94%
Credit Risk Adjustment	0.05%
Business Risk Adjustment	0.25%
Recommended Common Equity Cost Rate	10.24%

After reviewing the cost rates based on these models, I conclude that the indicated common equity cost rate is 9.94%, before any adjustment for credit and business risks arising from EWAZ's likely Moody's bond rating of A3, and greater unique business risks relative to the Utility Proxy Group, as discussed in more detail below and in the direct testimony of Company witness Thomas A. Loquvam. Thus, the indicated common equity cost rate of 9.94% based solely on the Utility Proxy Group must be adjusted upward by 0.05% for credit risk and 0.25% to reflect EWAZ's increased unique business risk, as noted above. The

details of these adjustments will be discussed below. After adjustment, my recommended Company-specific risk-adjusted common equity cost rate is 10.24%.

III. General Principles

Q. WHAT GENERAL PRINCIPLES HAVE YOU CONSIDERED IN ARRIVING AT YOUR RECOMMENDED COMMON EQUITY COST RATE?

A. The cost of common equity is the return investors require to make an equity investment in a given firm. From the firm's perspective, that required return, whether it is provided to debt or equity investors, has a cost. Collectively, the "cost of debt" and the "cost of equity" are referred to as the "cost of capital."

The cost of capital is based on the economic principle of "opportunity cost," meaning that investing in any asset or security implies a forgone opportunity to invest in alternative assets or securities. The opportunity cost of an investment should equal the return available on investments of comparable risk.

Although both debt and equity have costs, those costs differ fundamentally. The cost of debt is often contractually defined and can be directly observed in the market as the interest rate or yield on debt securities. In contrast, the cost of equity is not normally contractually defined nor can it be directly observed in the market. Rather, because common equity investors have a claim on a firm's cash flows only after debt holders are paid, it is the uncertainty (or risk) associated with the equity investors' lower priority or junior position to receive those residual cash flows compared to debt holders that determines the cost of equity. In other words, because common equity investors bear this

"residual risk," they require higher returns than debt holders. In that sense, common equity and debt investors are distinct: they invest in different securities, face different risks, and require different returns. That is not to say that the risks facing debt and equity investors are completely separate and distinct; the two may share common risks, but only to a point. Commentary from both debt and equity analysts is instructive and helps inform the determination of the required return.

According to the basic financial principle of risk and return, the investor-required return on investment is a function of the level of investor-perceived risk as reflected in the market prices paid by investors. The higher/lower the investor-perceived risk, the higher/lower the investor-required return. The investor-required return is forward-looking, or expectational, as it is the return which the investor expects to receive in the future for investing capital today and is based on expected economic and capital market conditions.

In unregulated industries, the competition of the marketplace is the principal determinant of the price of products or services. For regulated public utilities, like EWAZ, regulation acts as a substitute for marketplace competition. A sufficient level of earnings is required to assure that the utility can: (1) fulfill its obligation to provide safe and reliable service at all times; (2) maintain the integrity of presently invested capital through future reinvestment; and (3) attract needed new capital at a reasonable cost and on reasonable terms in competition with other firms of comparable risk. This is consistent with the previously noted rate of return standard established by the Arizona Supreme Court in the *Simms* case.

In rate base/rate of return regulation, the authorized return on common equity is defined as the investor-required return. In turn, the investor-required return is defined as the return required by the investor on the funds invested in the publicly traded common stocks of firms. As stated previously, the cost of common equity is not directly observable in the capital markets since there is no contractual basis or obligation on the part of a firm to provide a return to its common shareholders, unlike the contractual coupon or interest rate on its debt obligations. Therefore, the cost of common equity must be estimated from market (economic and financial) data, using financial models developed for that purpose, such as the CAPM, DCF, and RPM. Therefore, my recommended common equity cost rate is based on the marketplace data of a proxy group of utilities that are as similar in risk as possible to EWAZ based on selection criteria discussed below.

Because empirical financial models for determining the cost of common equity are subject to limiting assumptions or other constraints, most finance texts recommend using multiple approaches to estimate the cost of common equity. As a practical matter, no individual model is more reliable than all others under all market conditions. The use of multiple common equity cost rate models adds reliability to the estimation of the investor-required return.

Using both the market data of a proxy group of similar risk and multiple common equity cost rate models adds reliability to the informed expert judgment used in estimating the common equity cost rate. Therefore, it is prudent and appropriate to use multiple methodologies to mitigate the effects of limiting assumptions and inputs associated with any single approach.

A. Business Risk

Q. PLEASE DEFINE BUSINESS RISK AND EXPLAIN WHY IT IS IMPORTANT TO THE DETERMINATION OF A REASONABLE RATE OF RETURN.

A. The investor-required return on common equity reflects investors' assessment of the total investment risk of the subject firm. Total investment risk is often discussed in the context of business risk and financial risk.

Business risk refers to the basic viability of a business, the question of whether a company will be able to generate sufficient revenue to cover its operational expenses and cost of capital. Financial risk is related to the company's ability to generate sufficient cash flow to be able to make interest payments on financing or to meet other debt-related obligations.

Examples of the business risks generally faced by water utilities include, but are not limited to, the legal and regulatory environment, mandatory environmental compliance requirements, customer mix and concentration of customers, service territory economic growth, declining per customer water use, risks and uncertainties of water supply limitations, operations, capital intensity, size, the degree of operating leverage, and the like, all of which have a direct bearing on earnings.

Although analysts, including rating agencies, may categorize business risks according to individual categories, as a practical matter they are inter-related and are not wholly distinct from one another. Therefore, it is difficult to specifically and numerically quantify the effect of any individual factor on the investor-required return. For determining an appropriate return on equity, the relevant issue is where investors see the subject company as falling within a

spectrum of risk. To the extent investors view a company as being exposed to additional risk, the required return will increase.

For regulated water utilities, business risks are both long- and near-term in nature. Whereas near-term business risks are reflected in year-to-year variability in earnings and cash flow brought about by economic or regulatory factors, long-term business risks reflect the prospect of an impaired ability of investors to earn a return on and of their invested capital. Moreover, because water utilities accept the obligation to provide safe, adequate, and reliable water service at all times (in exchange for the opportunity to earn a fair and reasonable return on their investment), they generally do not have the option to delay, defer, or reject required long-term capital investments in order to comply with Safe Drinking Water Act ("SDWA") standards. Those investments are generally capital-intensive, and water utilities therefore cannot choose to avoid raising external funds during periods of capital market distress.

Because water utilities invest in long-lived assets, long-term business risks are of considerable concern to equity investors. That is, the risk of not recovering the return on and of their investment extends far into the future. But, the timing and nature of events that may lead to losses are also uncertain. Consequently, those risks and their implications for the required return on equity tend to be difficult to quantify. That does not mean, however, that the risk is of no consequence to investors. Analysts may apply, for example, simulation-based methods to assess the potential risk, but in the final analysis (like the investors that commit their capital) regulatory commissions, like the Arizona Corporation Commission, must review a variety of quantitative and qualitative

data and apply their reasoned judgment to determine how long-term risks weigh in their assessment of the market-required return on equity.

Q. WHAT BUSINESS RISKS DOES THE WATER UTILITY INDUSTRY IN GENERAL FACE TODAY?

A. Water is necessary for life and is the only utility product intended for customers to ingest. Consequently, water quality is of paramount importance to the public health and well-being of customers. As a result, water utilities are subject to additional and increasingly stringent public health and safety regulations. Beyond health and safety concerns, customers also have significant aesthetic (*e.g.* taste and odor) concerns regarding the water delivered to them, with regulators paying close attention to these concerns because of the strong reactions they evoke in consumers.

Increasingly stringent environmental standards necessitate additional capital investment in the treatment and distribution of water, thereby increasing the pressure on water utilities' free cash flows through increased capital expenditures for infrastructure, repair, and replacement. In addition, the United States Environmental Protection Agency ("U.S. EPA") and individual state and local environmental agencies continually monitor potential contaminants in the water supply and promulgate or expand regulations when necessary. 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.

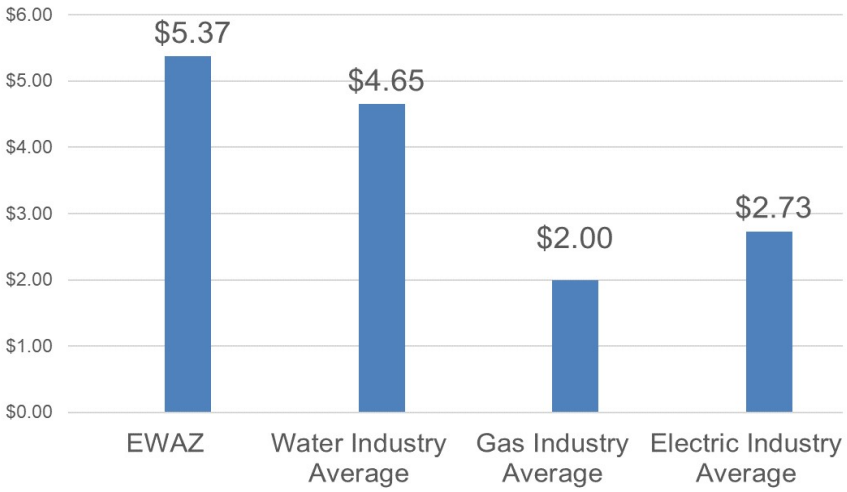
Water utilities are typically vertically engaged in the entire process of acquiring supply, producing, treating, and distributing water, serving both a production function and a delivery function. Accordingly, water utilities require significant capital investment, not only in transmission and distribution systems, but also in sources of supply (surface and groundwater), production (wells), treatment, and storage. Significant capital investment is necessary to serve additional customers and to replace aging systems, creating a major risk factor for the water utility industry. The obligation to comply with U.S. EPA, state and local regulations, and to make necessary capital investments to ensure safe and reliable service is continual, regardless of the state of capital markets.

Q. PLEASE DISCUSS THE CAPITAL INTENSITY OF THE WATER UTILITY INDUSTRY RELATIVE TO OTHER UTILITY INDUSTRIES.

A. As a capital-intensive industry, water utilities require significantly greater capital investment in the infrastructure required to produce a dollar of revenue than do other industries, including electric and natural gas utilities. For example, as shown on Chart 1, below, it took $4.65 of net utility plant on average to produce $1.00 in operating revenues in 2018 for the water utility industry. In contrast, for the natural gas and electric utility industries, on average it took just $2.00 and $2.73, respectively, to produce $1.00 in operating revenues in 2018. For EWAZ specifically, it took $5.37 of capital investment to produce $1.00 of revenue in 2018, higher than the water industry average. As financing needs have increased and will continue to increase, the competition for capital from traditional sources has increased and continues to increase, making the need to

maintain financial integrity and the ability to attract needed new capital increasingly important.

Chart 1:
Capital Intensity of EWAZ and the Water, Gas, and Electric Utility Industries[3]



Q. HOW WILL WATER UTILITIES RAISE THE CAPITAL REQUIRED TO FUND NECESSARY INFRASTRUCTURE REPLACEMENTS?

A. The water utility industry's high degree of capital intensity, coupled with the need for substantial infrastructure capital spending, requires regulatory support in the form of adequate and timely rate relief, including the allowance of a sufficient rate of return on investment.

Substantial water utility investment and expenditures require significant financing. The three sources typically used for financing are debt, equity (common and preferred), and cash flow from operations. All three are intricately linked to the opportunity to earn a sufficient rate of return on investment and the ability to achieve that return. The return must be sufficient to maintain credit quality and enable the water utility to attract necessary new capital, be it debt or

[3] SNL Financial, Company SEC Form 10-Ks.

equity capital. If unable to raise debt or equity capital, the water utility must turn to either retained earnings or free cash flow[4], both of which are directly linked to earning a sufficient rate of return. In general, the level of free cash flow represents the financial flexibility of a firm, *i.e.*, its 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 water utility to attract the new capital, at a reasonable cost and on reasonable terms, needed to invest in critical new utility infrastructure. An insufficient rate of return can be financially devastating for water utilities given their obligation to protect the public health by providing safe, adequate, and reliable water service to their customers at all times.

Q. PLEASE CONTINUE YOUR DISCUSSION OF BUSINESS RISKS.

A. In addition to its capital-intensive nature, the water utility industry also experiences low depreciation rates. Given that depreciation is one of the principal sources of internally-generated cash flows for all utilities, low depreciation rates mean that utilities cannot rely on depreciation as a source of cash like other industries do. Because utility assets have long lives and, hence, long capital recovery periods, utilities face increased risk due to inflation, which results in a significantly higher cost to replace decades-old utility plant where original cost was a small fraction of the cost of the plant to replace it.

In view of the foregoing, the water utility industry's high degree of capital intensity and low depreciation rates, coupled with the need for capital spending to

[4] Operating cash flow (funds from operations) minus capital expenditures.

replace aging and failing water infrastructure, makes the need to maintain financial integrity and the ability to attract needed new capital vital, which is accomplished through the allowance of a sufficient rate of return, increasingly important in order for water utilities to be able to successfully meet the challenges and investment needs they face.

B. 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 created by the introduction of senior capital, *i.e.*, debt and preferred stock, into the capital structure. As noted above, it is the additional risk that a company may not have sufficient cash flows to meet its financial obligations. The higher the proportion of debt 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.

Q. CAN THE COMBINED BUSINESS AND FINANCIAL RISKS (*I.E.*, INVESTMENT RISK) OF AN ENTERPRISE BE PROXIED BY BOND AND CREDIT RATINGS?

A. Yes, but not entirely. 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).

However, one must keep in mind that a long-term credit or bond issue rating is an opinion regarding the particular company's overall financial capacity to pay its financial obligations as they become due and payable. It is not an assessment of the risk faced by equity investors. The claims of equity holders are subordinate to the claims of debt holders, including bond holders, and are perpetual in life. As noted above, whereas bondholders can be assured of the probability that a particular company will be able to meet its financial obligations (and thus have higher credit/bond ratings), common equity holders bear the residual risk of insufficient or volatile cash flows in perpetuity. For that fundamental reason, the risks of owning common equity do not directly correspond to the risks of owning bonds.

IV. EPCOR Water Arizona Inc. and the Utility Proxy Group

Q. HAVE YOU REVIEWED FINANCIAL DATA FOR EWAZ?

A. Yes. EWAZ provides water and wastewater service to approximately 142,000 and 61,000 retail customers, respectively, during the test year ended December 31, 2019. EWAZ is an operating subsidiary of EPCOR USA, Inc., which is itself ultimately owned by EPCOR Utilities Inc. ("EPCOR" or the "Parent"). Therefore, EWAZ's common stock is not publicly-traded.

V. Utility Proxy Group

Q. PLEASE EXPLAIN HOW YOU CHOSE THE UTILITY PROXY GROUP.

A. I chose the Utility Proxy Group by selecting those water companies that met the following criteria:

1) They are included in the Water Utility Group of *Value Line's* Standard Edition (January 10, 2020);
2) They have 70% or greater of 2018 total operating income derived from, and 70% or greater of 2018 total assets devoted to, regulated water operations;
3) They had not publicly announced involvement in any major merger or acquisition activity (*i.e.*, one publicly-traded utility merging with or acquiring another) at the time of the preparation of this testimony;
4) They have not cut or omitted their common dividends during the past five years or through the time of the preparation of this testimony;
5) They have *Value Line* and Bloomberg adjusted betas;
6) They have a positive *Value Line* five-year dividends per share ("DPS") growth rate projection; and,
7) They have *Value Line*, Bloomberg, Zacks or Yahoo! Finance, consensus five-year earnings per share ("EPS") growth rate projections.

The following seven companies meet these criteria:

- American States Water Co. ("AWR");
- American Water Works Co. Inc. ("AWK");
- Aqua America, Inc. ("WTRG");[5]
- California Water Service Corp. ("CWT");
- Middlesex Water Co. ("MSEX");
- SJW Corporation ("SJW"); and
- York Water Co. ("YORW").

Q. HAVE YOU REVIEWED FINANCIAL DATA FOR THE UTILITY PROXY GROUP?

A. Yes. Page 1 of Exhibit DWD-2 contains comparative capitalization and financial statistics for the Utility Proxy Group for the years 2014-2018. As shown on page

[5] Aqua America, Inc. changed its name to Essential Utilities, Inc. subsequent to my analysis.

1, during the five-year period ending 2018, the historically achieved average earnings rate on book common equity for the group was 10.85%. The Utility Proxy Group had an average common equity ratio (excluding short-term debt) during the years 2014-2018 of 54.08%. Total debt to earnings before interest, taxes, depreciation, and amortization for the years 2014-2018 ranged between 3.26 and 4.22 times, averaging 3.55 times. Funds from operations to total debt ranged from 21.36% to 26.86%, averaging 24.11%.

VI. Common Equity Cost Rate Models

Q. IS IT IMPORTANT THAT COST OF COMMON EQUITY MODELS BE MARKET-BASED?

A. Yes. Regulated utilities, like EWAZ, must compete for equity along with all other companies with commensurate risk, which includes non-utilities. The cost of common equity is thus determined based on equity market expectations for the returns of those companies. If an individual investor is choosing to invest their capital among companies with comparable risk, they will choose the company providing a higher return over a company providing a lower return.

Q. ARE THE COST OF COMMON EQUITY MODELS YOU USE MARKET-BASED MODELS?

A. Yes. The DCF model is market-based in that market prices are used in developing the dividend yield component of the model. The RPM and CAPM are also market-based in that the bond/issuer ratings and expected bond yields/risk-free rate used in the application of the RPM and CAPM reflect the market's assessment of bond/credit risk. In addition, the use of beta 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. Moreover, market prices are used in the development of the monthly returns and equity risk premiums used in the Predictive Risk Premium Model ("PRPM"). Selection criteria for the Non-Price Regulated Proxy Group are based on regression analyses of market prices and reflect the market's assessment of total risk.

A. <u>Discounted Cash Flow Model</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 assumes 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 use the single-stage constant growth DCF model. The single-stage DCF model is expressed as:

$$K = (D_1 / P_0) + g$$

Where:
- K = Cost of Equity Capital;
- D_1 = Expected Dividend Per Share in one year;
- P_0 = Current Market Price; and
- g = Expected Dividend Per Share Growth.

Q. PLEASE DESCRIBE THE DIVIDEND YIELD USED IN YOUR APPLICATION OF THE DCF MODEL.

A. The unadjusted dividend yields are based on a recent (January 31, 2020) indicated dividend, divided by the average of closing market prices for the 60 days ending January 31, 2020, as shown in Column [1] on page 1 of Exhibit DWD-3.

Q. PLEASE EXPLAIN THE ADJUSTED DIVIDEND YIELD SHOWN IN COLUMN [7] ON PAGE 1 OF EXHIBIT DWD-3.

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 expectational growth rate, referred to as D_1, in calculating the dividend yield component of the model. However, since the various companies in the Utility 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 12-month period. Therefore, the actual average dividend yields in Column [1] on page 1 of Exhibit DWD-3, 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 UTILITY PROXY GROUP USED IN YOUR APPLICATION OF THE DCF MODEL.

A. Investors with more limited resources than institutional investors are likely to rely on widely available financial information services, such as *Value Line*, Bloomberg, Zacks, and Yahoo! Finance. Investors recognize that such analysts

have significant insight into the dynamics of the industries and individual companies they analyze, as well as an entity's historical and future ability to effectively manage the effects of changing laws and regulations and ever-changing economic and market conditions.

Over the long run, there can be no growth in DPS without growth in EPS. Thus, the use of 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. Therefore, I have relied on security analysts' five-year forecasts of EPS growth in my application of the DCF model.

Q. PLEASE SUMMARIZE THE DCF MODEL RESULTS.

A. As shown on page 1 of Exhibit DWD-3, the average result of the single-stage DCF model is 9.37%, while the median result is 9.47%. I have averaged these two results in arriving at a conclusion of a DCF-indicated common equity cost rate of 9.42% for the Utility Proxy Group. By doing so, I have considered the DCF results for each company without giving undue weight to outliers on either the high or the low side.

B. <u>The Risk Premium Model</u>

Q. PLEASE DESCRIBE THE THEORETICAL BASIS OF THE RPM.

A. The RPM is based on the basic financial principle of risk and return, namely, 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, as previously discussed. Therefore, investors require higher

returns from investment in common stocks than from investment in bonds to compensate them for bearing the additional risk.

While it is possible to directly observe bond returns and yields, the investor-required common equity return cannot be directly determined or observed. According to RPM theory, one can estimate 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 the RPM, 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 ON THE RPM.

A. I relied on the results of the application of two risk premium methods, as shown in Exhibit DWD-4. The first method is the 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")*[6] and *The Electricity Journal ("TEJ")*,[7] was developed from the work of Robert F. Engle, who shared the Nobel Prize in Economics in 2003, "for methods of analyzing

[6] "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.

[7] "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).

economic time series with time-varying volatility ("ARCH")"[8] (with "ARCH" standing for autoregressive conditional heteroskedasticity). Engle found that the volatility in market prices, returns, and equity risk premiums cluster over time, making them highly predictable and available to predict future levels of risk and risk premiums.

The PRPM estimates the risk / return relationship directly as the predicted equity risk premium is generated by the predictability of volatility, or risk. Thus, the PRPM is not based on an estimate of investor behavior, but rather on 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 Utility Proxy Group, minus the historical monthly yield on long-term U.S. Treasury securities, through January 2020. Using a generalized form of ARCH, known as GARCH, each water utility's projected equity risk premium was determined using Eviews© statistical software. When the GARCH model is applied to the historical return data, it produces a predicted GARCH variance series[9] and a GARCH coefficient.[10] The forecasted 30-year U.S. Treasury Bond yield of 2.68% is based on consensus forecasts for the six quarters ending with the second quarter 2021, derived from the February 1, 2020 *Blue Chip Financial Forecasts ("Blue Chip")*, averaged with the long-range forecasts for 2021 – 2025 and 2026 – 2030, also from the December 1, 2019 *Blue Chip*. The average PRPM indicated common equity cost rate is

[8] www.nobelprize.org
[9] Illustrated in Columns [1] and [2] on page 2 of Exhibit DWD-4.
[10] Illustrated in Column [4] on page 2 of Exhibit DWD-4.

11.79%, while the median is 11.44% for the Utility Proxy Group, as shown in Column [7] on page 2 of Exhibit DWD-4. Consistent with my use of the average of the mean and median DCF results, I rely on the average of the mean and median PRPM results of 11.62% as my conclusion of the PRPM equity cost rate, also shown in Column [7] on page 2 of Exhibit DWD-4.

Q. PLEASE EXPLAIN THE ADJUSTED TOTAL MARKET APPROACH RPM.

A. The adjusted total market approach RPM adds a prospective public utility bond yield to the average of: (1) an equity risk premium derived from a beta-adjusted total market equity risk premium; and (2) an equity risk premium based on the S&P Utilities Index.

Q. PLEASE EXPLAIN THE BASIS OF THE ADJUSTED PROSPECTIVE BOND YIELD OF 4.07% APPLICABLE TO THE UTILITY PROXY GROUP, SHOWN ON LINE 5 ON PAGE 3 OF EXHIBIT DWD-4.

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 Utility Proxy Group, is essential. Since *Blue Chip* does not publish consensus yield forecasts for the Moody's A-rated public utility bonds, I began with the February 1, 2020 *Blue Chip* consensus forecast of about 50 economists of the expected yield on Aaa-rated corporate bonds for the six calendar quarters ending with the second calendar quarter of 2021, averaged with the long-range forecasts for 2021 – 2025, and 2026 – 2030,

from the December 1, 2019 *Blue Chip*.[11] As shown on line 1 on page 3, the average expected yield on Moody's Aaa-rated corporate bonds is 3.66%. In order to derive a prospective Moody's A-rated public utility bond yield, an adjustment of 0.36%, or the average spread between Moody's Aaa-rated corporate bond yields and Moody's A-rated public utility bond yields for the three months ending January 2020[12], must be made to the average Aaa corporate bond yield. This results in a bond yield of 4.02% applicable to a Moody's A-rated public utility bond.

Because the Utility Proxy Group average Moody's issuer rating is A2/A3, as shown on page 5 of Exhibit DWD-4, a 0.05% upward adjustment to the prospective Moody's A-rated public utility bond yield of 4.02% is necessary. The 0.05% represents one-sixth (1/6) of the average spread of 0.32% between Moody's A-rated and Baa-rated public utility bonds for the three months ending January 2020. This is necessary so that the prospective bond yield is consistent with the Utility Proxy Group's average A2/A3 long-term issuer rating. Adding the 0.05% to the 4.02% prospective Moody's A-rated public utility bond yield results in a 4.07% expected bond yield for the Utility Proxy Group, as shown on line 5 on page 3 of Exhibit DWD-4.

Q. PLEASE EXPLAIN THE DERIVATION OF THE BETA-DERIVED EQUITY RISK PREMIUM.

A. The components of the beta-derived risk premium model are: (1) An expected market equity risk premium over corporate bonds, and (2) the beta coefficient.

[11] See pages 10 and 11 of Exhibit DWD-4.
[12] See page 4 of Exhibit DWD-4.

The derivation of the beta-derived equity risk premium applied to the Utility Proxy Group is shown on lines 1 through 9 on page 8 of Exhibit DWD-4. The total beta-derived equity risk premium applied is based on an average of three historical data-based equity risk premiums, two *Value Line*-based equity risk premiums, and one Bloomberg-based equity risk premium. Each of these is described in turn.

Q. HOW DID YOU DERIVE A MARKET RISK PREMIUM BASED ON LONG-TERM HISTORICAL DATA?

A. To derive an historical market equity risk premium, I used the most recent holding period returns for the large company common stocks from the 2019 SBBI® Yearbook: Stocks, Bonds, Bills, and Inflation ("SBBI – 2019")[13] less the average historical yield on Moody's Aaa/Aa-rated corporate bonds for the period 1928 to 2018. The use of holding period returns over a very long period of time is appropriate because it is consistent with the long-term investment horizon presumed by investing in a going concern, *i.e.*, a company expected to operate in perpetuity.

SBBI's long-term arithmetic mean monthly total return rate on large company common stocks was 11.62% and the long-term arithmetic mean monthly yield on Moody's Aaa/Aa-rated corporate bonds was 6.08%.[14] As shown on line 1 on page 8 of Exhibit DWD-4, subtracting the mean monthly bond yield from the total return on large company stocks results in a long-term historical equity risk premium of 5.54%.

[13] SBBI – 2019 Appendix A Tables.
[14] As explained in note 1 on page 8 of Exhibit DWD-4.

I used the arithmetic mean monthly total return rates for the large company stocks and yields (income returns) for the Moody's Aaa/Aa corporate bonds, because they are appropriate for the purpose of estimating the cost of capital as noted in SBBI – 2019.[15] The use of the arithmetic mean return rates and yields is appropriate because historical total returns and equity risk premiums provide insight into the variance and standard deviation of returns needed by investors in estimating future risk when making a current investment. If investors relied on the geometric mean of historical 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 to a constant rate of change, thereby obviating the year-to-year fluctuations, or variance, which is critical to risk analysis.

Q. PLEASE EXPLAIN THE DERIVATION OF THE REGRESSION-BASED EQUITY RISK PREMIUM.

A. To derive the regression analysis-derived market equity risk premium of 8.63%, shown on line 2 on page 8 of Exhibit DWD-4, I used the same monthly annualized total returns on large company common stocks relative to the monthly annualized yields on Moody's Aaa/Aa corporate bonds as mentioned above. The relationship between interest rates and the market equity risk premium was modeled using the observed monthly market equity risk premium as the dependent variable, and the monthly yield on Moody's Aaa/Aa corporate bonds as the independent variable. I used a linear Ordinary Least Squares ("OLS")

[15] SBBI – 2019, at 10-22.

regression, in which the market equity risk premium is expressed as a function of the Moody's Aaa/Aa corporate bonds yield:

$$RP = \alpha + \beta\ (R_{Aaa/Aa})$$

Q. PLEASE EXPLAIN THE DERIVATION OF THE PRPM EQUITY RISK PREMIUM.

A. I used the same PRPM approach described previously to develop another equity risk premium estimate. The inputs to the model are the historical monthly returns on large company common stocks minus the monthly yields on Aaa/Aa corporate bonds during the period from January 1928 through January 2020.[16] Using the same generalized form of ARCH, known as GARCH, the projected equity risk premium is determined using Eviews© statistical software. The resulting PRPM predicted market equity risk premium is 7.22%.[17]

Q. PLEASE EXPLAIN THE DERIVATION OF A PROJECTED EQUITY RISK PREMIUM BASED ON VALUE LINE DATA FOR YOUR RPM ANALYSIS.

A. As noted previously, because both ratemaking and the cost of capital, including the cost rate of common equity, are prospective, a prospective market equity risk premium is essential. The derivation of the forecasted or prospective market equity risk premium can be found in note 4 on page 8 of Exhibit DWD-4. Consistent with my calculation of the dividend yield component in my DCF analysis, this prospective market equity risk premium is derived from an average of the three- to five-year median market price appreciation potential by *Value Line* for the 13 weeks ending January 31, 2020, plus an average of the median

[16] Data from January 1926-December 2018 is from SBBI – 2019. Data from January 2019 – January 2020 is from Bloomberg Professional Services.
[17] Shown on line 3 on page 8 of Exhibit DWD-4.

estimated dividend yield for the common stocks of the 1,700 firms covered in *Value Line*'s Standard Edition.[18]

The average median expected price appreciation is 44%, which translates to a 9.54% annual appreciation, and, when added to the average of *Value Line's* median expected dividend yields of 2.15%, equates to a forecasted annual total return rate on the market of 11.69%. The forecasted Aaa bond yield of 3.66% is deducted from the total market return of 11.69%, resulting in an equity risk premium of 8.03%, shown on page 8, line 4 of Exhibit DWD-4.

Q. PLEASE EXPLAIN THE DERIVATION OF AN EQUITY RISK PREMIUM BASED ON THE S&P 500 COMPOSITE INDEX COMPANIES.

A. Using data from *Value Line*, I calculated an expected total return on the S&P 500 using expected dividend yields and long-term growth estimates as a proxy for capital appreciation. The expected total return for the S&P 500 is 14.51%. Subtracting the prospective yield on Aaa Corporate bonds of 3.66% results in a 10.85% projected equity risk premium.

Q. PLEASE EXPLAIN THE DERIVATION OF AN EQUITY RISK PREMIUM BASED ON BLOOMBERG DATA.

A. Using data from Bloomberg Professional Services, I calculated an expected total return on the S&P 500 using expected dividend yields and long-term growth estimates as a proxy for capital appreciation, identical to the method described above. The expected total return for the S&P 500 is 13.73%. Subtracting the prospective yield on Aaa Corporate bonds of 3.66% results in a 10.07% projected equity risk premium.

[18] As explained in detail in page 2, note 1 of Exhibit DWD-5.

Q. WHAT IS YOUR CONCLUSION OF THE MARKET EQUITY RISK PREMIUM FOR YOUR TOTAL MARKET APPROACH RPM?

A. I gave equal weight to all equity risk premiums in arriving at my conclusion of 8.39%.

After calculating the average market equity risk premium of 8.39%, I adjusted it by beta to account for the risk of the Utility Proxy Group. As discussed below, the beta coefficient is a meaningful measure of prospective relative risk to the market as a whole and is a logical means by which to allocate a company's, or proxy group's, share of the market's total equity risk premium, relative to corporate bond yields. As shown on page 1 of Exhibit DWD-5, the average of the mean and median beta coefficient for the Utility Proxy Group is 0.63. Multiplying the beta coefficient of the Utility Proxy Group of 0.63 by the market equity risk premium of 8.39% results in a beta-adjusted equity risk premium of 5.29% for the Utility Proxy Group.

Q. HOW DID YOU DERIVE THE EQUITY RISK PREMIUM BASED ON THE S&P UTILITY INDEX AND MOODY'S A-RATED PUBLIC UTILITY BONDS?

A. I estimated three equity risk premiums based on S&P Utility Index holding returns, and two equity risk premiums based on the expected returns of the S&P Utilities Index, using *Value Line* and Bloomberg data, respectively. Turning first to the S&P Utility Index holding period returns, I derived a long-term monthly arithmetic mean equity risk premium between the S&P Utility Index total returns of 10.74%, and monthly A-rated public utility bond yields of 6.53% from 1928 to

2019, to arrive at an equity risk premium of 4.21%.[19] I then used the same historical data to derive an equity risk premium of 6.44% based on a regression of the monthly equity risk premiums. The final S&P Utility Index holding period equity risk premium involves applying the PRPM using the historical monthly equity risk premiums from January 1928 to January 2020 to arrive at a PRPM-derived equity risk premium of 3.90% for the S&P Utility Index.

I then derived expected total returns on the S&P Utilities Index of 10.05% and 8.80% using data from *Value Line* and Bloomberg Professional Services, respectively, and subtracted the prospective A2-rated public utility bond yield (4.02%)[20], which resulted in risk premiums of 6.03% and 4.78%, respectively. As with the market equity risk premiums, I averaged all the risk premiums to arrive at my utility-specific equity risk premium of 5.07%.

Q. WHAT IS YOUR CONCLUSION REGARDING THE APPROPRIATE EQUITY RISK PREMIUM FOR USE IN YOUR ADJUSTED TOTAL MARKET APPROACH RPM ANALYSIS?

A. The equity risk premium applicable to the Utility Proxy Group is 5.18%, derived by averaging the beta-derived premium of 5.29% (line 9 on page 8 of Exhibit DWD-4) with the equity risk premium of 5.07% based on the holding period returns of public utilities with Moody's A-rated bonds (line 6 on page 12 of Exhibit DWD-4).

Q. WHAT IS THE RPM-BASED COMMON EQUITY COST RATE BASED ON THE ADJUSTED TOTAL MARKET APPROACH?

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[19] As shown on line 1 on page 12 of Exhibit DWD-4.
[20] Derived on line 3 on page 3 of Exhibit DWD-4.

A. It is 9.25% for the Utility Proxy Group as shown on line 7 on page 3 of Exhibit DWD-4.

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 DWD-4, the indicated RPM-derived common equity cost rate is 10.44%, derived by averaging the PRPM results (11.62%) with those based on the adjusted total market approach (9.25%).

C. The Capital Asset Pricing Model

Q. PLEASE EXPLAIN THE THEORETICAL BASIS OF THE CAPM.

A. CAPM theory defines risk as the co-variability of a security's returns with the market's returns as measured by beta (β). A beta of 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 those 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; and

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. Morin[21] states:

> With few exceptions, the empirical studies agree that … low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted.
>
> * * *
>
> Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:
>
> $$K = R_F + x\,\beta(R_M - R_F) + (1-x)\,\beta(R_M - R_F)$$
>
> where x is a fraction to be determined empirically. The value of x that best explains the observed relationship Return = 0.0829 + 0.0520 β is between 0.25 and 0.30. If x = 0.25, the equation becomes:
>
> $$K = R_F + 0.25(R_M - R_F) + 0.75\,\beta(R_M - R_F)$$

In view of theory and practical research, I have applied both the traditional CAPM and the ECAPM to the companies in the Utility Proxy Group and averaged the results.

Q. PLEASE DESCRIBE YOUR SELECTION OF THE BETA COEFFICIENT FOR YOUR CAPM ANALYSIS?

[21] Roger A. Morin, New Regulatory Finance, Public Utility Reports, 2006, pp. 175, 190.

A. I relied on an average of the adjusted betas published by *Value Line* and provided by Bloomberg Professional Services. While both of those services adjust their calculated (or "raw") beta coefficients to reflect the tendency of the beta coefficient to regress to the market mean of 1.00, *Value Line* calculates its beta over a five-year period, while Bloomberg's calculation is based on two years of data.

Q. PLEASE DESCRIBE YOUR SELECTION OF A RISK-FREE RATE OF RETURN FOR YOUR CAPM ANALYSIS.

A. As shown in Column [5] on Exhibit DWD-5, the risk-free rate adopted for both applications of the CAPM is 2.68%. The risk-free rate of 2.68% is based on the average of the consensus forecast for the six quarters ending with the second quarter 2021, from the February 1, 2020 *Blue Chip*, averaged with the long-range forecasts for 2021 – 2025 and 2026 – 2030, from the December 1, 2019 *Blue Chip,*[22] as detailed in note 2 on page 2 of Exhibit DWD-5.

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 Bonds is almost risk-free and its term is consistent with: (1) the long-term cost of capital to public utilities measured by the yields on A-rated public utility bonds; (2) the long-term investment horizon inherent in utilities' common stock; and (3) the long-term life of the jurisdictional rate base to which the allowed reasonable rate of return (*i.e.,* cost of capital) will be applied. In contrast, short-term U.S. Treasury yields are more volatile, and reflect a short-term investment horizon that is not consistent with the long-term

[22] See pages 10 and 11 of Exhibit DWD-4.

investment horizon, and life of the rate base to which the allowed rate of return is applied.

Q. PLEASE EXPLAIN THE ESTIMATION OF THE EXPECTED EQUITY RISK PREMIUM FOR THE MARKET.

A. The basis of the market risk premium is explained in detail in note 1 on page 2 of Exhibit DWD-5. As discussed previously, the market risk premium is derived from an average of three historical data-based market risk premiums, two *Value Line* data-based market risk premiums, and one Bloomberg data-based market risk premium.

The long-term income return on U.S. Government Securities of 5.12% was deducted from the SBBI – 2019 monthly historical total market return of 11.89%, which results in an historical market equity risk premium of 6.77%.[23] I applied a linear OLS regression to the monthly annualized historical returns on the S&P 500 relative to historical yields on long-term U.S. Government Securities from SBBI – 2019. That regression analysis yielded a market equity risk premium of 9.65%. The PRPM market equity risk premium is 8.13% and is derived using the PRPM relative to the yields on long-term U.S. Treasury securities from January 1926 through January 2020.

The *Value Line*-derived forecasted total market equity risk premium is derived by deducting the forecasted risk-free rate of 2.68%, discussed above, from the *Value Line* projected total annual market return of 11.69%, resulting in a forecasted total market equity risk premium of 9.01%. The S&P 500 projected market equity risk premium using *Value Line* data is derived by subtracting the

[23] SBBI – 2019, at Appendix A-1 (1) through A-1 (3) and Appendix A-7 (19) through A-7 (21).

projected risk-free rate of 2.68% from the projected total return of the S&P 500 of 14.51%. The resulting market equity risk premium is 11.83%.

The S&P 500 projected market equity risk premium using Bloomberg data is derived by subtracting the projected risk-free rate of 2.68% from the projected total return of the S&P 500 of 13.73%. The resulting market equity risk premium is 11.05%.

These six measures, when averaged, result in an average total market equity risk premium of 9.41%.

Q. WHAT ARE THE RESULTS OF APPLYING THE TRADITIONAL AND EMPIRICAL CAPM TO THE UTILITY PROXY GROUP?

A. As shown in Column [8] on page 1 of Exhibit DWD-5, the average and median CAPM/ECAPM equity cost rate is 9.05%.

D. <u>Common Equity Cost Rates for a Proxy Group of Domestic, Non-Price Regulated Companies Based on the DCF, RPM, and CAPM</u>

Q. WHY DO YOU ALSO CONSIDER A PROXY GROUP OF DOMESTIC, NON-PRICE REGULATED COMPANIES?

A. In the *Hope* and *Bluefield*[24] cases, the U.S. Supreme Court did not specify that comparable risk companies had to be utilities. Since the purpose of rate regulation is to be a substitute for marketplace competition, non-price regulated firms operating in the competitive marketplace make an excellent proxy if they are comparable in total risk to the Utility Proxy Group being used to estimate the cost of common equity. The selection of such domestic, non-price regulated

[24] *Federal Power Commission v. Hope Natural Gas Co.,* 320 U.S. 591, 602 (1922); *Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia*, 262 U.S. 679, 692-93 (1923)

competitive firms theoretically and empirically results in a proxy group which is comparable in total risk to the Utility Proxy Group, since all of these companies compete for capital in the exact same markets.

Q. HOW DID YOU SELECT NON-PRICE REGULATED COMPANIES THAT ARE COMPARABLE IN TOTAL RISK TO THE UTILITY PROXY GROUP?

A. In order to select a proxy group of domestic, non-price regulated companies similar in total risk to the Utility Proxy Group, I relied on the beta coefficients and related statistics derived from *Value Line* regression analyses of weekly market prices over the most recent 260 weeks (*i.e.*, five years). These selection criteria resulted in a proxy group of 17 domestic, non-price regulated firms comparable in total risk to the Utility Proxy Group. Total risk is the sum of non-diversifiable market risk and diversifiable company-specific risks. The criteria used in selecting the domestic, non-price regulated firms was:

1) They must be covered by *Value Line Investment Survey* (Standard Edition);
2) They must be domestic, non-price regulated companies, *i.e.*, not utilities;
3) Their beta coefficients must lie within plus or minus two standard deviations of the average unadjusted beta coefficients of the Utility Proxy Group; and
4) The residual standard errors of the *Value Line* regressions which gave rise to the unadjusted beta coefficients must lie within plus or minus two standard deviations of the average residual standard error of the Utility Proxy Group.

Beta coefficients measure market, or systematic, risk, which is not diversifiable. The residual standard errors of the regressions measure each firm's company-specific, diversifiable risk. This is demonstrated clearly by Jack

C. Francis on page 273 of Investments: Analysis and Management where he states "Total risk can be measured by the variance of returns, denoted Var(*r*). This measure of *total risk is partitioned into its systematic and unsystematic components*."[25] Essentially, companies that have similar betas and standard errors of regression have similar total investment risk.

Q. HAVE YOU PREPARED AN EXHIBIT WHICH SHOWS THE DATA FROM WHICH YOU SELECTED THE 17 DOMESTIC, NON-PRICE REGULATED COMPANIES THAT ARE COMPARABLE IN TOTAL RISK TO THE UTILITY PROXY GROUP?

A. Yes, the basis of my selection and both proxy groups' regression statistics are shown in Exhibit DWD-6.

Q. DID YOU CALCULATE COMMON EQUITY COST RATES USING THE DCF MODEL, RPM, AND CAPM FOR THE NON-PRICE REGULATED PROXY GROUP?

A. Yes. *Because* the DCF model, RPM, and CAPM have been applied in an identical manner as described above, I will not repeat the details of the rationale and application of each model. One exception is in the application of the RPM, where I did not use public utility-specific equity risk premiums, nor did I apply the PRPM to the individual non-price regulated companies.

Page 2 of Exhibit DWD-7 derives the constant growth DCF model common equity cost rate. As shown, the indicated common equity cost rate,

[25] Jack C. Francis, Investments: Analysis and Management 5th (McGraw-Hill, 1991) at 273 (italics in original).

using the constant growth DCF for the Non-Price Regulated Proxy Group comparable in total risk to the Utility Proxy Group, is 11.65%.

Pages 3 through 5 of Exhibit DWD-7 contain the data and calculations that support the 10.90% RPM common equity cost rate. As shown on line 1, page 3 of Exhibit DWD-7, the consensus prospective yield on Moody's Baa-rated corporate bonds for the six quarters ending in the second quarter of 2021, and for the years 2021 to 2025 and 2026 to 2030, is 4.54%.[26] Since the Non-Price Regulated Proxy Group has an average Moody's long-term issuer rating of Baa1, a downward adjustment of 0.18% to the projected Baa-rated corporate bond yield is necessary to reflect the difference in ratings,[27] which results in a projected Baa1-rated corporate bond yield of 4.36%.

When the beta-adjusted risk premium of 6.54%[28] relative to the Non-Price Regulated Proxy Group is added to the prospective Baa1-rated corporate bond yield of 4.36%, the indicated RPM common equity cost rate is 10.90%.

Page 6 of Exhibit DWD-7 contains the inputs and calculations that support my indicated CAPM/ECAPM common equity cost rate of 10.23%.

Q. WHAT IS THE COST RATE OF COMMON EQUITY BASED ON THE NON-PRICE REGULATED PROXY GROUP?

A. As shown on page 1 of Exhibit DWD-7, the results of the common equity models applied to the Non-Price Regulated Proxy Group -- which group is comparable in total risk to the Utility Proxy Group -- are as follows: 11.65% (DCF), 10.90%

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[26] *Blue Chip Financial Forecasts*, December 1, 2019, at page 14 and February 1, 2020, at page 2.

[27] As demonstrated in line 2 and described in note 2, page 2 of Exhibit DWD-7.

[28] Derived on page 4 of Exhibit DWD-7.

(RPM), and 10.23% (CAPM). The average of the mean and median of these models is 10.92%, which I used as the indicated common equity cost rate for the Non-Price Regulated Proxy Group.

VII. Indicated Common Equity Cost Rate Before Adjustment for Company-Specific Risk

Q. WHAT IS THE INDICATED COMMON EQUITY COST RATE BASED ON THE COST OF COMMON EQUITY MODEL RESULTS?

A. It is 9.94%, based on the common equity cost rates resulting from the application of cost of common equity models to the Utility Proxy Group and the Non-Price Regulated Proxy Group as shown on Table 2, above, and page 2 of Exhibit DWD-1. 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 be relied on solely 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.

Based on these common equity cost rate results, I conclude that a common equity cost rate of 9.94% is indicated for the Utility Proxy Group before determining if there need to be any Company-specific adjustments. The indicated common equity cost rate of 9.94% is the average of the mean and median result produced by the models described above.

A. Company-Specific Risk Adjustments

1. Credit Risk Adjustment

Q. PLEASE DISCUSS YOUR PROPOSED CREDIT RISK ADJUSTMENT.

A. EPCOR, EWAZ's ultimate parent company, has a long-term issuer rating of A- from Standard & Poor's, which is generally equivalent to an A3 rating from Moody's Investor Service. EPCOR's A- (A3) long-term issuer rating is riskier than the A2/A3 average long-term issuer rating of the Utility Proxy Group.[29] Hence, an upward credit risk adjustment is necessary to reflect the lower credit rating, *i.e.* the assumed A3 long-term issuer rating of EPCOR relative to the A2/A3 long-term issuer rating of the Utility Proxy Group.[30]

An indication of the magnitude of the necessary upward adjustment to reflect the greater credit risk inherent in an A3 bond rating is one-sixth of a recent three-month average spread between Moody's A- and Baa2-rated public utility bond yields of 0.32%, shown on page 4 of Exhibit DWD-4, or 0.05%.[31]

2. Business Risk Adjustment

Q. DOES EWAZ FACE ADDITIONAL BUSINESS RISK RELATIVE TO THE UTILITY PROXY GROUP?

A. Yes. EWAZ's smaller size, lack of geographical diversity, and potential regulatory risk stemming from uncertainty as to whether the Commission will continue to adhere to its historical ratemaking policies that I discuss below are all cause for consideration in determination of the appropriate common equity cost rate for EWAZ.

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[29] Shown on page 5 of Exhibit DWD-4.
[30] *Ibid.*
[31] 0.05% = 0.32% * (1/6).

Q. DOES EWAZ'S SMALLER SIZE COMPARED WITH THE UTILITY PROXY GROUP INCREASE ITS BUSINESS RISK?

A. Yes. EWAZ's smaller size relative to the Utility Proxy Group companies indicates greater relative business risk for the Company because, all else being equal, size has a material bearing on risk.

Size affects business risk because smaller companies generally are less able to cope with significant events that affect sales, revenues and earnings. For example, smaller companies face more risk exposure to business cycles and economic conditions, both nationally and locally. Additionally, the loss of revenues from a few larger customers would have a greater effect on a small company than on a bigger company with a larger, more diverse, customer base.

As further evidence that smaller firms are riskier, investors generally demand greater returns from smaller firms to compensate for less marketability and liquidity of their securities. Duff & Phelps' 2019 Valuation Handbook Guide to Cost of Capital - Market Results through 2018 ("D&P - 2019") discusses the nature of the small-size phenomenon, providing an indication of the magnitude of the size premium based on several measures of size. In discussing "Size as a Predictor of Equity Premiums," D&P - 2019 states:

> The size effect is based on the empirical observation that companies of smaller size are associated with greater risk and, therefore, have greater cost of capital [sic]. The "size" of a company is one of the most important risk elements to consider when developing cost of equity capital estimates for use in valuing a business simply because size has been shown to be a *predictor* of equity returns. In other words, there is a significant (negative) relationship between size and historical equity returns - as size

> *decreases*, returns tend to *increase*, and vice versa. (footnote omitted) (emphasis in original)[32]

Furthermore, in "The Capital Asset Pricing Model: Theory and Evidence," Fama and French note 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 (covariances) in returns not captured in the market return and are priced separately from market betas.[33]

Based on this evidence, Fama and French proposed their three-factor model which includes a size variable in recognition of the effect size has on the cost of common equity.

Also, it is a basic financial principle that the use of funds invested, and not the source of funds, is what gives rise to the risk of any investment.[34] Simply put, risks of investments should be looked at as stand-alone operations and not how they are financed. Eugene Brigham, a well-known authority, states:

> A number of researchers have observed that portfolios of small-firms (sic) have earned consistently higher average returns than those of large-firm stocks; this is called the "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**. (emphasis added)[35]

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[32] Duff & Phelps 2019 Valuation Handbook Guide to Cost of Capital - Market Results through 2018, Wiley 2019, at 4-1.

[33] 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, at 25-43.

[34] Brealey, Richard A. and Myers, Stewart C., Principles of Corporate Finance (McGraw-Hill Book Company, 1996), at 204-205, 229.

[35] Brigham, Eugene F., Fundamentals of Financial Management, Fifth Edition (The Dryden Press, 1989), at 623.

Consistent with the financial principle of risk and return discussed above, increased relative risk due to small size must be considered in the allowed rate of return on common equity. Therefore, the Commission's authorization of a cost rate of common equity in this proceeding must appropriately reflect the unique risks of EWAZ's, including its small size, which is justified and supported above by evidence in the financial literature.

Q. IS THERE ANY PRECEDENT THAT IDENTIFIES THE REGULATORY RISK FACED BY UTILITIES?

A. Yes. In *Hope*, the Supreme Court noted that it is not the theory, but the impact of the rate order which counts.[36] In *Duquesne*, the Supreme Court noted the risks to utilities of ratemaking treatment and the importance of establishing ratemaking treatment that does not continuously favor customers to the continuous detriment of investors:

> [t]he risks a utility faces are in large part defined by the rate methodology because utilities are virtually always public monopolies dealing in essential service, and so relatively immune to the usual market risks. Consequently, a State's decision to arbitrarily switch back and forth between methodologies in a way which required investors to bear the risk of bad investments at some times while denying them the benefit of good investments at others would raise serious constitutional questions.[37]

Q. HOW DOES THE REGULATORY ENVIRONMENT IN WHICH A UTILITY OPERATES AFFECT ITS ACCESS TO AND COST OF CAPITAL?

A. The regulatory environment can significantly affect a utility's access to capital and its cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment

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[36] *Federal Power Commission v. Hope Natural Gas Co.,* 320 U.S. 591, 602 (1922).
[37] *Duquesne Light Co. v. Barasch,* 488 U.S. 299, 315 (1989).

of the regulatory environment. As noted by Moody's, "the predictability and supportiveness of the regulatory framework in which a regulated utility operates is a key credit consideration and the one that differentiates the industry from most other corporate sectors."[38] Moody's further noted that:

> For a regulated utility company, we consider the characteristics of the regulatory environment in which it operates. These include how developed the regulatory framework is; its track record for predictability and stability in terms of decision making; and the strength of the regulator's authority over utility regulatory issues. A utility operating in a stable, reliable, and highly predictable regulatory environment will be scored higher on this factor than a utility operating in a regulatory environment that exhibits a high degree of uncertainty or unpredictability. Those utilities operating in a less developed regulatory framework or one that is characterized by a high degree of political intervention in the regulatory process will receive the lowest scores on this factor.[39]

S&P also notes that regulatory commissions should eliminate, or at least greatly reduce, the issue of rate-case lag.[40] Moody's agrees that timely cost recovery is an important determinant of credit quality, stating that "[t]he ability to recover prudently incurred costs in a timely manner is perhaps the single most important credit consideration for regulated utilities, as the lack of timely recovery of such costs has caused financial stress for utilities on several occasions"[41] Similarly, Fitch Ratings notes that in the current environment of rising costs, utilities will require more frequent rate increases to maintain financial results, resulting in further exposure to regulatory risks.[42]

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[38] Moody's Global Infrastructure Finance, Regulated Electric and Gas Utilities, August 2009, at 6.
[39] *Ibid*.
[40] Standard and Poor's, Assessing Vertically Integrated Utilities' Business Risk Drivers, U.S. Utilities and Power Commentary, November 2006, at 10.
[41] Moody's, Global Infrastructure Finance, Regulated Electric and Gas Utilities, August 2009, at 7.
[42] FitchRatings, U.S. Utilities, Power, and Gas 2010 Outlook, December 4, 2009, at 1.

Q. HOW IS THE ARIZONA REGULATORY ENVIRONMENT PERCEIVED BY EQUITY INVESTORS?

A. Both Regulatory Research Associates ("RRA")[43] and *Value Line*[44] rank Arizona as average from an investor viewpoint. Even though the Arizona regulatory environment is seen to be average by RRA and *Value Line*, it is my opinion that the Commission's Order in the most recent case involving Arizona Water Company's Northern Group (Docket No. W-01445A-18-0164) lacked the "predictability and supportiveness" that Arizona Water Company had historically experienced. That Decision, coupled with the pending docket seeking to change ratemaking mechanisms that have been important to Arizona utilities' financial integrity for several years (such as treatment of Post-Test Year Plant, awarding a return on the Fair Value Increment, and the System Improvement Benefits mechanism), will likely cause the rating agencies to become increasingly concerned about the stability and predictability of Arizona's regulatory climate. RRA concurs with my opinion as it states:

> The policies of the ACC, which is comprised of elected officials, have generally been highly politicized, contributing to a heightened degree of risk for the state's utilities. There has also been a relatively high rate of turnover in the leadership ranks in recent years, as a majority of the current ACC commissioners have been serving for fewer than three years, **further increasing uncertainty as commissioners get up to speed on complex issues**. (emphasis added)[45]

[43] RRA Regulatory Focus, Arizona Regulatory Review, July 27, 2018.
[44] *Value Line Investment Survey*, Electric Utility (West) Industry Sheet, April 27, 2018.
[45] RRA Regulatory Focus, Arizona Regulatory Review, July 27, 2018.

In view of the above, it is apparent that EWAZ is facing extraordinary regulatory risk relative to the Utility Proxy Group and its investors must be compensated for that risk.

Q. IS THERE A WAY TO QUANTIFY AN ADJUSTMENT TO COMPENSATE EWAZ FOR GREATER BUSINESS RISK DUE TO ITS SMALLER SIZE AND UNCERTAIN REGULATORY ENVIRONMENT RELATIVE TO THE UTILITY PROXY GROUP?

A. Yes. EWAZ has greater relative risk than the average utility in the Utility Proxy Group because of its smaller size compared with the Utility Proxy Group, as measured by an estimated market capitalization of common equity for EWAZ.

Table 3: Size as Measured by Market Capitalization for EWAZ and the Utility Proxy Group

	Market Capitalization* ($ Millions)	Times Greater than The Company
EWAZ	$991.257	
Utility Proxy Group	$6,201.103	6.3x

*From page 1 of Exhibit DWD-8.

EWAZ's estimated market capitalization was $991.257 million as of January 31, 2020,[46] compared with the market capitalization of the average company in the Utility Proxy Group of $6,201.103 million as of January 31, 2020. The average company in the Utility Proxy Group has a market capitalization 6.3 times the size of EWAZ's estimated market capitalization.

[46] $991.257M = $234.45M (book equity from EWAZ 2018 Annual Report to the ACC) * 422.8% (market-to-book ratio of the Utility Proxy Group) as demonstrated on page 2 of Schedule DWD-8.

As a result, it is necessary to upwardly adjust the indicated common equity cost rate of 9.94% to reflect EWAZ's greater risk due to their smaller relative size. The determination is based on the size premiums for portfolios of New York Stock Exchange, American Stock Exchange, and NASDAQ listed companies ranked by deciles for the 1926 to 2018 period as shown on the bottom half of page 1 of Exhibit DWD-8. The average size premium for the Utility Proxy Group with a market capitalization of $6.2 billion falls in the 4th decile, while the Company's estimated market capitalization of $991.257 million places it in the 8th decile. The size premium spread between the 4th decile and the 8th decile is 0.95% as shown on the top of page 1 of Exhibit DWD-8. Even though a 0.95% upward size adjustment is justified based on my analysis, to be conservative, I applied a size premium of 0.25% to the Company's indicated common equity cost rate.

VIII. Rate of Return on the Fair Value Incremental Rate Base

Q. IS EWAZ REQUESTING THAT RATES BE SET IN THIS PROCEEDING BASED ON A FAIR VALUE RATE BASE?

A. Yes.

Q. HOW DOES THE COMMISSION TYPICALLY ESTIMATE THE FAIR VALUE RATE OF RETURN ("FVROR") ON THE FAIR VALUE RATE BASE?

A. It is my understanding that the Commission has estimated the FVROR on the fair value rate base ("FVRB") by first applying the overall rate of return based on a market-based cost of common equity relative to the common equity portion of the original cost less depreciation rate base ("OCRB") and the debt cost rate relative to the debt portion of the OCRB. Then, the Commission applies a return loosely

based on the estimated real risk-free rate to the difference between the OCRB and the FVRB, with this difference known as the "fair value increment" ("FVI").[47]

Q. DO YOU AGREE WITH THE COMMISSION'S TRADITIONAL METHOD OF ESTIMATING THE RETURN ON THE FAIR VALUE INCREMENT?

A, No, I believe that the Commission's traditional approach is conservative. Because common equity investors bear greater investment risk being last in line in any claim on a firm's assets and earnings, they require a greater return than do debt investors as discussed previously. Therefore, the basic premise of the Commission's method, namely, that equity investors require a lower return than the nominal risk-free rate on the FVI to rate base is inconsistent with the basic financial principle of risk and return. My cost of common equity analysis is based on the market data of utilities of comparable risk to EWAZ. Moreover, investors purchase stock at the market value of that stock, requiring and expecting to receive a return on that market value. Thus, the FVRB and the FVI are analogous to a return on the market value of investors' investment.

In regulation, rate base, no matter whether measured by book value or fair value, is presumed to be financed with a mix of both debt and common equity. Thus, there is no basis for presuming that the FVRB is financed with any other mix of capital than what is contained in a utility's book value capital structure. Therefore, the return on the FVI should be a return based on the same mix of debt and common equity cost rates as the overall rate of return applied to the OCRB. Despite my disagreement with the approach the Commission has used

[47] Decision No. 70665, Docket No. G-01551A-07-0504 (Southwest Gas Corporation) (Dec. 24, 2008) at 32.

in establishing the return on the fair value increment, EWAZ is willing to accept the Commission's traditional method in this case so long as the Commission properly addresses fair value in establishing the overall revenue requirement.

Moreover, it is my understanding that the Commission has recently applied a zero percent return on the FVI in an Arizona Water Company rate case covering its Northern Group of water systems.[48] Although I am not an attorney and defer to the Company's legal counsel on this issue, applying a zero-percent return is contrary to the constitutional obligation to consider and utilize fair value to establish the utility's revenue requirement. In other words, while the Company can accept the Commission's methodology, EWAZ believes a zero-percent return on the fair value increment improperly ignores fair value in determining the utility's revenue requirement.

Q. HAVE YOU ESTIMATED A RETURN ON THE FVI USING THE COMMISSION'S METHOD?

A. Yes. However, in doing so, I have recognized the fact that the FVRB is an equal blend, or average, of the OCRB and the Reconstructed Cost New Depreciated ("RCND") rate base by estimating inflation as an average of historical and projected inflation, and the nominal risk-free rate as an average of an historical and projected risk-free rate.

Q. HOW DID YOU ESTIMATE INFLATION?

A. First, as shown on line 1 of Exhibit DWD-9, I estimated historical inflation of 2.41% as the average annual inflation from 1990 – 2018 from SBBI - 2019.[49] I

[48] Decision No. 77380, dated August 19, 2019.
[49] SBBI- 2019 Appendices A-7 and A-15.

have used the 1990 – 2018 (29 years) time frame because the average life of EWAZ's utility plant is approximately 29 years based on the composite depreciation rate of the components of their utility plant.

Second, I averaged two measures of projected inflation. As shown on line 2 of Exhibit DWD-9, I estimated projected inflation of 2.37% based on projections from 2019 - 2029 of the Consumer Price Index ("CPI") from the U.S. Annual Energy Outlook 2020 ("AEO")[50]. On line 3, I estimated projected inflation of 2.15% by averaging the long-range forecasts for 2021 – 2025 (2.20%) and 2026 – 2030 (2.10%) from the December 1, 2019 *Blue Chip.*[51] Averaging the AEO projected inflation of 2.37% with projected inflation of 2.15% results in projected inflation of 2.26% as shown on line 4 of Exhibit DWD-9.

Finally, I averaged historical inflation of 2.41% with the mean projected inflation of 2.26%, resulting in an inflation rate of 2.34% as shown on line 5 of Exhibit DWD-9.

Q. HOW DID YOU ESTIMATE THE NOMINAL RISK-FREE RATE?

A. First, as shown on line 6 of Exhibit DWD-9, the nominal historical risk-free rate of 5.03% is estimated as the average annual income return on long-term U.S. government bonds from the same 1990 – 2018 time period discussed above from SBBI - 2019.[52]

Second, as shown on line 7 of Exhibit DWD-9, I estimated the nominal projected risk-free rate of 3.45% by averaging the long-range forecasts for 2021 – 2025 (3.20%) and 2026 – 2030 (3.70%) from the December 1, 2019 *Blue Chip.*

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[50] Table 20. Macroeconomic Indicators. http://www.eia.gov/forecasts/aeo/
[51] See page 11 of Exhibit DWD-4.
[52] SBBI - 2019 Appendix A-7.

Averaging the nominal historical risk-free rate of 5.03% with the nominal projected risk-free of 3.45% results in a nominal projected risk-free rate of 4.24% as shown on line 8 of Exhibit DWD-9.

Q. HOW DID YOU ESTIMATE THE REAL RISK-FREE RATE?

A. I estimated the real risk-free rate by adjusting the mean nominal risk-free rate of 4.24% by the mean inflation rate of 2.34% as shown on line 5 of Exhibit DWD-9; using the formula in Note 7 on Exhibit DWD-9, resulted in a mean real risk-free rate of 1.86%.[53]

The resulting return on the FVI is one-half of the 1.86% real risk-free rate, or 0.93%, as shown on line 10 on Exhibit DWD-9.

IX. Conclusion

Q. PLEASE STATE YOUR CONCLUSIONS.

A. A common equity cost rate of 10.24% is consistent with the *Simms* standard of a just 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 that EWAZ will be able to continue providing safe, adequate, and reliable water service to the benefit of customers. Thus, it balances the interests of both customers and the Company. Furthermore, my recommended return on the FVI of 0.93% is a conservative measure of the return that would be required by investors.

Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

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[53] 1.86% = ((1 + 4.24%) / (1 + 2.34%)) - 1.

EXHIBITS

EPCOR Water Arizona Inc.
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D'Ascendis Direct Exhibits

	Exhibit
Summary of Cost of Capital and Fair Rate of Return	DWD-1
Financial Profile of the Utility Proxy Group	DWD-2
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model	DWD-3
Indicated Common Equity Cost Rate Using the Risk Premium Model	DWD-4
Indicated Common Equity Cost Rate Using the Capital Asset Pricing Model	DWD-5
Basis of selection for the Non-Price Regulated Companies Comparable in Total Risk to the Utility Proxy Group	DWD-6
Cost of Common Equity Models Applied to the Comparable Risk Non-Price Regulated Companies	DWD-7
Estimated Market Capitalization for EWAZ and the Utility Proxy Group	DWD-8
Calculation of the Return on the Fair Value Increment	DWD-9

EXHIBIT DWD-1

EPCOR Water Arizona Inc.
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes
at December 31, 2019

Type Of Capital	Ratios (1)	Cost Rate	Weighted Cost Rate
Long-Term Debt	49.66%	4.38% (1)	2.17%
Common Equity	50.34%	10.24% (2)	5.15%
Total	100.00%		7.32%

Notes:

(1) From Schedule D-1.
(2) From page 2 of this Exhibit.

EPCOR Water Arizona Inc.
Brief Summary of Common Equity Cost Rate

Line No.	Principal Methods	Proxy Group of Seven Water Companies
1.	Discounted Cash Flow Model (DCF) (1)	9.42%
2.	Risk Premium Model (RPM) (2)	10.44%
3.	Capital Asset Pricing Model (CAPM) (3)	9.05%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	10.92%
5.	Indicated Common Equity Cost Rate before Adjustment for Risk	9.94%
6.	Credit Risk Adjustment (5)	0.05%
7.	Size Risk Adjustment (6)	0.25%
8.	Recommended Common Equity Cost Rate after Adjustment for Risk	10.24%

Notes:
(1) From Exhibit DWD-3.
(2) From page 1 of Exhibit DWD-4.
(3) From page 1 of Exhibit DWD-5.
(4) From page 1 of Exhibit DWD-7.
(5) It can be assumed that EWAZ's bond rating would be A3 (A-) given its Parent's S&P bond rating of A-. Given the Utility Proxy Group's split rating of A2/A3 (Moody's), an upward adjustment of 1/6 of the spread between A2 and Baa2 public utility bond yields (as shown on page 4 of Exhibit DWD-4) is approriate.

(6) Business risk adjustment to reflect EWAZ's greater business risk relative to the Utility Proxy Group as detailed in the accompanying direct testimony.

EXHIBIT DWD-2

Proxy Group of Seven Water Companies
CAPITALIZATION AND FINANCIAL STATISTICS (1)
2014 - 2018, Inclusive

	2018	2017	2016	2015	2014	
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$3,208.722	$2,837.657	$2,680.018	$2,535.795	$2,408.744	
SHORT-TERM DEBT	$184.221	$185.250	$152.691	$106.277	$82.810	
TOTAL CAPITAL EMPLOYED	$3,392.943	$3,022.907	$2,832.709	$2,642.072	$2,491.554	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	4.747 %	4.83 %	4.943 %	5.079 %	5.21 %	
PREFERRED STOCK	5.92 %	5.91 %	5.91 %	5.91 %	5.67 %	
CAPITAL STRUCTURE RATIOS						5 YEAR AVERAGE
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	45.17 %	45.58 %	46.14 %	46.49 %	45.68 %	45.81 %
PREFERRED STOCK	0.09	0.10	0.11	0.11	0.12	0.11
COMMON EQUITY	54.74	54.32	53.75	53.40	54.20	54.08
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	48.40 %	48.93 %	48.42 %	47.77 %	47.16 %	48.14 %
PREFERRED STOCK	0.08	0.09	0.10	0.11	0.12	0.10
COMMON EQUITY	51.52	50.98	51.47	52.12	52.73	51.76
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.33 %	3.65 %	3.97 %	4.59 %	5.41 %	4.19 %
MARKET / AVERAGE BOOK RATIO	308.46	310.75	280.21	229.70	216.71	269.17
DIVIDEND YIELD	2.00	1.99	2.15	2.62	2.74	2.30
DIVIDEND PAYOUT RATIO	60.08	55.80	56.03	57.45	52.45	56.36
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	10.12 %	11.31 %	10.93 %	10.39 %	11.52 %	10.85 %
TOTAL DEBT / EBITDA (3)	4.22 x	3.42 x	3.41 x	3.42 x	3.26 x	3.55 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	21.36 %	22.87 %	23.65 %	25.81 %	26.86 %	24.11 %
TOTAL DEBT / TOTAL CAPITAL	48.40 %	48.93 %	48.42 %	47.77 %	47.16 %	48.14 %

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 Seven Water Companies
2014 - 2018, Inclusive

	2018	2017	2016	2015	2014	5 YEAR AVERAGE
American States Water Co.						
Long-Term Debt	36.54 %	37.75 %	39.40 %	41.15 %	39.15 %	38.80 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	63.46	62.25	60.60	58.85	60.85	61.20
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
American Water Works Company Inc						
Long-Term Debt	56.55 %	55.81 %	54.74 %	53.89 %	52.70 %	54.74 %
Preferred Stock	0.05	0.07	0.09	0.11	0.15	0.09
Common Equity	43.40	44.12	45.17	46.00	47.15	45.17
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America						
Long-Term Debt	56.06 %	52.26 %	50.81 %	50.76 %	49.45 %	51.87 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	43.94	47.74	49.19	49.24	50.55	48.13
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Service Group						
Long-Term Debt	52.74 %	43.40 %	45.83 %	44.69 %	40.46 %	45.42 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	47.26	56.60	54.17	55.31	59.54	54.58
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Middlesex Water Co.						
Long-Term Debt	38.94 %	38.65 %	38.91 %	40.44 %	41.55 %	39.70 %
Preferred Stock	0.59	0.64	0.67	0.69	0.71	0.66
Common Equity	60.47	60.71	60.42	58.87	57.74	59.64
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
SJW Group						
Long-Term Debt	32.67 %	48.20 %	50.69 %	50.03 %	51.66 %	46.65 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	67.33	51.80	49.31	49.97	48.34	53.35
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
York Water Co.						
Long-Term Debt	42.68 %	43.02 %	42.60 %	44.46 %	44.81 %	43.51 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	57.32	56.98	57.40	55.54	55.19	56.49
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Seven Water Companies						
Long-Term Debt	45.17 %	45.58 %	46.14 %	46.49 %	45.68 %	45.81 %
Preferred Stock	0.09	0.10	0.11	0.11	0.12	0.11
Common Equity	54.74	54.32	53.75	53.40	54.20	54.08
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Source of Information
Annual Forms 10-K

EXHIBIT DWD-3

EPCOR Water Arizona Inc.
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for
Proxy Group of Seven Water Companies

Proxy Group of Seven Water Companies	[1] Average Dividend Yield (1)	[2] Value Line Projected Five Year Growth in EPS (2)	[3] Zack's Five Year Projected Growth Rate in EPS	[4] Yahoo! Finance Projected Five Year Growth in EPS	[5] Bloomberg 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.	1.41 %	8.00 %	8.00 %	6.00 %	10.00 %	8.00 %	1.47 %	9.47 %
American Water Works Company Inc	1.62	9.50	8.10	8.20	8.52	8.58	1.69	10.27
Aqua America	2.02	8.00	6.10	6.40	6.69	6.80	2.09	8.89
California Water Service Group	1.66	8.00	10.00	9.80	10.00	9.45	1.74	11.19
Middlesex Water Co.	1.63	7.50	NA	2.70	NA	5.10	1.67	6.77
SJW Group	1.81	7.00	4.00	14.00	8.00	8.25	1.88	10.13
York Water Co.	1.60	9.50	NA	4.90	NA	7.20	1.66	8.86
							Average	9.37 %
							Median	9.47 %
							Average of Mean and Median	9.42 %

NA= Not Available

Notes:

(1) Indicated dividend at 01/31/2020 divided by the average closing price of the last 60 trading days ending 01/31/2020 for each company.

(2) From pages 2 through 8 of this Exhibit.

(3) Average of columns 2 through 4 excluding negative growth rates.

(4) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 5) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Co., 1.41% x (1+(1/2 x 8.00%)) = 1.47%.

(5) Column 5 + column 6.

Source of Information:

Value Line Investment Survey
www.zacks.com Downloaded on 01/31/2020
www.yahoo.com Downloaded on 01/31/2020
Bloomberg Professional Services

AMER. STATES WATER NYSE-AWR

RECENT PRICE 87.33 | P/E RATIO 41.0 (Trailing: 39.7 Median: 21.0) | RELATIVE P/E RATIO 2.23 | DIV'D YLD 1.4% | VALUE LINE

TIMELINESS 1 Raised 8/9/19
SAFETY 2 Raised 7/20/12
TECHNICAL 2 Lowered 12/20/19
BETA .65 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$68-$97	$83 (-5%)

2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	75	(-15%)	-2%
Low	55	(-35%)	-8%

Institutional Decisions

	1Q2019	2Q2019	3Q2019
to Buy	138	139	149
to Sell	105	109	124
Hld's(000)	26624	26893	27173

High:	21.0	19.4	19.8	18.2	24.1	33.1	38.7	44.1	47.2	58.4	69.6	96.0
Low:	13.5	14.9	15.6	15.3	17.0	24.0	27.0	35.8	37.3	41.1	50.1	63.3

LEGENDS
1.35 x Dividends p sh divided by Interest Rate
. . . . Relative Price Strength
2-for-1 split 9/13
Options: Yes
Shaded area indicates recession

Target Price Range 2022 2023 2024
128
96
80
64
48
40
32
24
16
12

% TOT. RETURN 11/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	29.1	6.5
3 yr.	112.3	24.6
5 yr.	169.7	38.9

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
6.99	6.81	7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.01	11.88	*12.85*	*13.10*	Revenues per sh	*15.75*
1.04	1.11	1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.81	2.70	2.96	2.84	*3.10*	*3.25*	"Cash Flow" per sh	*4.00*
.39	.53	.66	.67	.81	.78	.81	1.11	1.12	1.41	1.61	1.57	1.61	1.62	1.88	1.72	*2.15*	*2.20*	Earnings per sh A	*2.75*
.44	.44	.45	.46	.48	.50	.51	.52	.55	.64	.76	.83	.87	.91	.99	1.06	1.16	*1.26*	Div'd Decl'd per sh B■	*1.70*
1.88	2.51	2.12	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.89	2.39	3.55	3.08	3.44	*3.95*	*3.50*	Cap'l Spending per sh	*3.25*
6.98	7.51	7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.52	14.45	15.19	*16.10*	*17.00*	Book Value per sh D	*19.35*
30.42	33.50	33.60	34.10	34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	36.50	36.57	36.68	36.76	*36.90*	*37.00*	Common Shs Outst'g C	*37.50*
31.9	23.2	21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	25.7	34.0	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*23.5*
1.82	1.23	1.17	1.50	1.27	1.36	1.41	1.00	.97	.91	.97	1.06	1.24	1.34	1.29	1.83			Relative P/E Ratio	*1.30*
3.5%	3.6%	3.1%	2.5%	2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%	2.0%	1.8%			Avg Ann'l Div'd Yield	*2.6%*
361.0	398.9	419.3	466.9	472.1	465.8	458.6	436.1	440.6	436.8	*475*	*485*	Revenues ($mill)	*590*
29.5	41.4	42.0	54.1	62.7	61.1	60.5	59.7	69.4	63.9	*80.0*	*82.0*	Net Profit ($mill)	*105*
38.9%	43.2%	41.7%	39.9%	36.3%	38.4%	38.4%	36.8%	36.0%	22.0%	*23.0%*	*23.0%*	Income Tax Rate	*23.0%*
3.2%	5.8%	2.0%	2.5%	- -	- -	- -	- -	2.5%	- -	*Nil*	*1.0%*	AFUDC % to Net Profit	*1.0%*
45.9%	44.3%	45.4%	42.2%	39.8%	39.1%	41.1%	39.4%	38.0%	40.5%	*44.0%*	*44.5%*	Long-Term Debt Ratio	*46.0%*
54.1%	55.7%	54.6%	57.8%	60.2%	60.9%	58.9%	60.6%	62.0%	59.5%	*56.0%*	*55.5%*	Common Equity Ratio	*54.0%*
665.0	677.4	749.1	787.0	818.4	832.6	791.5	815.3	854.9	938.4	*1070*	*1130*	Total Capital ($mill)	*1350*
866.4	855.0	896.5	917.8	981.5	1003.5	1060.8	1150.9	1205.0	1296.3	*1390*	*1475*	Net Plant ($mill)	*1650*
5.9%	7.6%	7.1%	8.3%	8.9%	8.6%	9.0%	8.6%	9.3%	7.9%	*8.5%*	*8.5%*	Return on Total Cap'l	*9.0%*
8.2%	11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	*13.5%*	*13.0%*	Return on Shr. Equity	*14.0%*
8.2%	11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	*13.5%*	*13.0%*	Return on Com Equity	*14.0%*
3.2%	5.8%	5.3%	6.6%	6.8%	5.7%	6.0%	5.3%	6.2%	4.5%	*6.0%*	*6.0%*	Retained to Com Eq	*5.5%*
61%	47%	49%	45%	47%	53%	54%	56%	52%	61%	*54%*	*57%*	All Div'ds to Net Prof	*62%*

CAPITAL STRUCTURE as of 9/30/19
Total Debt $475.3 mill. **Due in 5 Yrs** $100.7 mill.
LT Debt $475.0 mill. **LT Interest** $24.0 mill. (45% of Cap'l)

Leases, Uncapitalized: Annual rentals $2.6 mill.
Pension Assets-12/18 $162.5 mill. **Oblig.** $196.1 mill.
Pfd Stock None

Common Stock 36,839,301 shs. as of 11/1/19

MARKET CAP: $3.2 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2017	2018	9/30/19
Cash Assets	.2	7.1	10.4
Accts Receivable	26.1	23.4	28.1
Other	129.2	101.0	94.0
Current Assets	155.5	131.5	132.5
Accts Payable	51.0	59.5	59.8
Debt Due	59.3	40.3	.3
Other	46.4	46.8	59.7
Current Liab.	156.7	146.6	119.8

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	3.5%	- -	*4.5%*
"Cash Flow"	6.0%	3.0%	*6.0%*
Earnings	9.0%	4.5%	*8.0%*
Dividends	7.5%	9.0%	*9.5%*
Book Value	5.0%	4.0%	*5.0%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2016	93.5	112.0	123.8	106.8	436.1
2017	98.8	113.2	124.4	104.2	440.6
2018	94.7	106.9	124.2	111.0	436.8
2019	101.7	124.6	134.5	*114.2*	*475*
2020	*105*	*125*	*140*	*115*	*485*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2016	.28	.45	.59	.30	1.62
2017	.34	.62	.57	.35	1.88
2018	.29	.44	.62	.37	1.72
2019	.35	.72	.76	*.32*	*2.15*
2020	*.38*	*.67*	*.70*	*.45*	*2.20*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.224	.224	.224	.242	.91
2017	.242	.242	.255	.255	.99
2018	.255	.255	.275	.275	1.06
2019	.275	.275	.305	.305	1.16
2020					

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Co., it supplies water to 259,919 customers in 70 cities in 10 counties. Service areas include the metropolitan areas of Los Angeles and Orange Counties. The company also provides electricity to 24,353 customers in Big Bear Lake and San Bernardino Cnty. Provides water & wastewater services to U.S. military bases through its ASUS sub. Sold Chaparral City Wtr. of AZ. (6/11). Employs about 815. BlackRock, Inc. owns 15.1% of out. shares; Vanguard, 11.5%; off. & dir. 1.2%. (4/19 Proxy). Chairman: Lloyd Ross. Pres. & CEO: Robert Sprowls. Inc: CA. Addr.: 630 East Foothill Blvd., San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

Shares of American States Water have not participated in the recent market rally. In the last quarter of 2019, the S&P 500 Index rallied almost 10%. Over that same time span, the value of AWR has actually declined approximately 3%, an underperformance of more than 1200 basis points. We think profit taking and sector rotation by institutional investors were at least partially responsible for the poor showing.

Earnings in 2020 should top last year's impressive figure. Even though 2019 likely ended on a down note, American States' share earnings probably climbed to $2.15, a 25% increase above the previous year's weak number. Rate relief and cost cutting were most likely the primary reasons for the strong comparison. These factors will probably have less of an impact on 2020's bottom line, but earnings per share could still well rise 2% to $2.20, as the unregulated operations' gain in importance (more below).

Finances are solid. The company remains a distance third in terms of size in the water industry (American Water Works and Aqua America are the two giants). Nevertheless, thanks to a balance sheet that doesn't have a large amount of debt, American Water is one of the two utilities in this nine-member group that carries a Financial Strength rating as high as an A.

Nonutility operations are generating a steady amount of income. The company's ASUS subsidiary provides water services to military bases via 50-year fixed-priced contracts. As more military installations privatize their water systems, we expect ASUS to raise its presence in this sector, by being successful in the competitive bidding process. This business should account for between 20% to 30% of total income by early next decade.

These shares are only for short-term investors. AWR carries a 1 (Highest) rank for year-ahead relative performance. Over the next 18-month period, our quantitative system believes the stock will actually decrease in value, however. In addition, even with the recent price decline, the equity is trading above our projected 2022-2024 Target Price Range. Finally, the dividend yield is subpar.

James A. Flood *January 10, 2020*

(A) Primary earnings. Excludes nonrecurring gains/(losses): '04, 7¢; '05, 13¢; '06, 3¢; '08, (14¢); '10, (23¢); '11, 10¢. Next earnings report due mid-February.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for split.
(D) Includes intangibles. As of 6/30/19; $1.1 million/$0.03 a share.

Company's Financial Strength	A
Stock's Price Stability	85
Price Growth Persistence	95
Earnings Predictability	90

AMERICAN WATER NYSE-AWK

RECENT PRICE 123.05 | P/E RATIO 33.3 (Trailing: 35.1 Median: 19.0) | RELATIVE P/E RATIO 1.81 | DIV'D YLD 1.7% | VALUE LINE

TIMELINESS 1 Raised 4/5/19
SAFETY 3 New 7/25/08
TECHNICAL 3 Lowered 12/13/19
BETA .55 (1.00 = Market)

18-Month Target Price Range

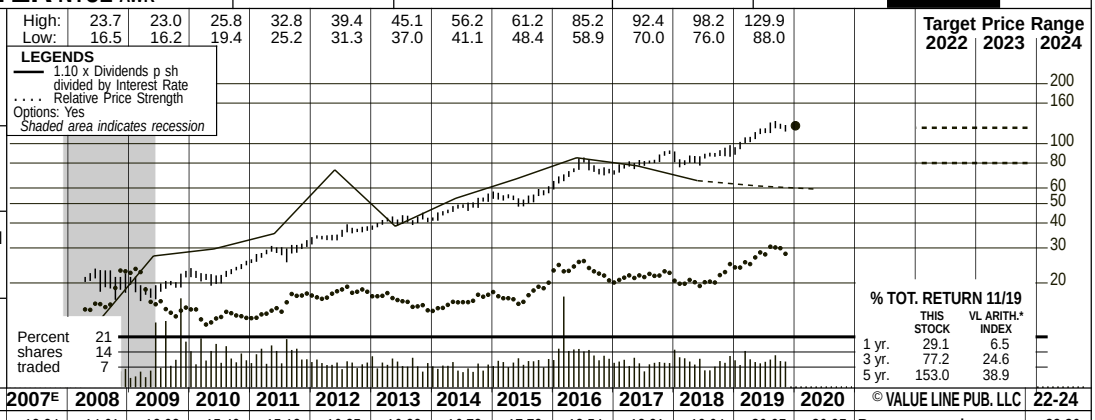
Low-High	Midpoint (% to Mid)
$105-$146	$126 (0%)

2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	120	(Nil)	2%
Low	80	(-35%)	-7%

Institutional Decisions

	1Q2019	2Q2019	3Q2019
to Buy	364	360	385
to Sell	325	331	322
Hld's(000)	155942	155051	153329



2003	2004	2005	2006E	2007E	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
--	--	--	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.54	18.81	19.04	*20.05*	*20.95*	Revenues per sh	*23.80*
--	--	--	.65	d.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.26	5.14	6.15	*6.75*	*7.10*	"Cash Flow" per sh	*8.30*
--	--	--	d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.62	2.38	3.15	*3.60*	*3.90*	Earnings per sh A	*4.70*
--	--	--	--	--	.40	.82	.86	.90	1.21	.84	1.21	1.33	1.47	1.62	1.78	1.96	*2.12*	Div'd Decl'd per sh B■	*2.75*
--	--	--	4.31	4.74	6.31	4.50	4.38	5.27	5.25	5.50	5.33	6.51	7.36	8.04	8.78	*8.70*	*9.20*	Cap'l Spending per sh	*9.00*
--	--	--	23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.24	30.13	32.42	*34.40*	*36.35*	Book Value per sh D	*41.25*
--	--	--	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.10	178.44	180.68	*181.00*	*182.00*	Common Shs Outst'g C	*189.00*
--	--	--	--	--	18.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	27.7	33.8	27.3	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*21.5*
--	--	--	--	--	1.14	1.04	.93	1.05	1.06	1.12	1.05	1.03	1.45	1.70	1.47			Relative P/E Ratio	*1.20*
--	--	--	--	--	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.0%	2.0%	2.1%			Avg Ann'l Div'd Yield	*2.8%*
2440.7	2710.7	2666.2	2876.9	2901.9	3011.3	3159.0	3302.0	3357.0	3440.0							*3630*	*3810*	Revenues ($mill)	*4500*
209.9	267.8	304.9	374.3	369.3	429.8	476.0	468.0	426.0	567.0							*650*	*700*	Net Profit ($mill)	*890*
37.9%	40.4%	39.5%	40.7%	39.1%	39.4%	39.1%	39.2%	53.3%	28.2%							*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
--	--	--	6.2%	5.1%	--	--	--	5.1%	4.0%							*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
56.9%	56.8%	55.7%	53.9%	52.4%	52.4%	53.7%	52.4%	54.7%	56.3%							*58.0%*	*58.0%*	Long-Term Debt Ratio	*59.0%*
43.1%	43.2%	44.2%	46.1%	47.6%	47.4%	46.2%	47.5%	45.3%	43.6%							*42.0%*	*42.0%*	Common Equity Ratio	*41.0%*
9289.0	9561.3	9580.3	9635.5	9940.7	10364	10911	10967	11875	13433							*14900*	*15700*	Total Capital ($mill)	*18800*
10524	11059	11021	11739	12391	12900	13933	14992	16246	17409							*18350*	*19300*	Net Plant ($mill)	*22500*
3.8%	4.4%	4.8%	5.4%	5.1%	5.5%	5.7%	5.6%	4.9%	5.4%							*5.5%*	*5.5%*	Return on Total Cap'l	*6.0%*
5.2%	6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%							*10.5%*	*10.5%*	Return on Shr. Equity	*11.5%*
5.2%	6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%							*10.5%*	*10.5%*	Return on Com Equity	*11.5%*
1.8%	2.8%	3.5%	3.6%	4.7%	4.3%	4.7%	4.0%	2.5%	4.2%							*5.0%*	*5.0%*	Retained to Com Eq	*5.0%*
65%	56%	52%	57%	40%	50%	50%	56%	68%	56%							*54%*	*54%*	All Div'ds to Net Prof	*59%*

CAPITAL STRUCTURE as of 9/30/19
Total Debt $9143.0 mil. **Due in 5 Yrs** $1555.0 mil.
LT Debt $8640.0 mil. **LT Interest** $370.0 mil. (59% of Cap'l)

Leases, Uncapitalized: Annual rentals $17.0 mill.
Pension Assets12/18 $1499.0 mill
Oblig. $1892.0 mil.
Pfd Stock $7.0 mill. **Pfd Div'd** $.4 mill

Common Stock 180,776,169 shares
as of 10/24/19

MARKET CAP: $22.2 billion (Large Cap)

CURRENT POSITION ($MILL.)	2017	2018	9/30/19
Cash Assets	82	158	116
Accts Receivable	272	301	335
Other	366	322	348
Current Assets	720	781	799
Accts Payable	195	175	149
Debt Due	1227	1035	503
Other	903	884	836
Current Liab.	2325	2094	1488

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	3.0%	3.5%	*4.0%*
"Cash Flow"	18.5%	6.0%	*7.0%*
Earnings	--	6.5%	*9.5%*
Dividends	--	10.5%	*9.0%*
Book Value	1.5%	4.0%	*5.0%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2016	743.0	827.0	930.0	802.0	3302.0
2017	756.0	844.0	936.0	821.0	3357.0
2018	761.0	853.0	976.0	850.0	3440.0
2019	813.0	882.0	1013.0	*922*	*3630*
2020	*850*	*930*	*1080*	*950*	*3810*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2016	.46	.77	.83	.57	2.62
2017	.52	.73	1.12	.01	2.38
2018	.59	.91	1.03	.62	3.15
2019	.62	.94	1.33	*.71*	*3.60*
2020	*.65*	*1.00*	*1.45*	*.80*	*3.90*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.34	.375	.375	.375	1.47
2017	.375	.415	.415	.415	1.62
2018	.415	.455	.455	.455	1.78
2019	.455	.50	.50	.50	1.96
2020					

BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to more than 14 million people in 46 states and Ontario, Canada. Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 87% of 2018 revenues. New Jersey is its largest market accounting for 24% of regulated revenues; Pennsylvania, 23%. Has 7,100 employees. The Vanguard Grp, owns 11.0% of outstanding shares; BlackRock, Inc., 7.9%; officers & directors, less than 1.0%. (3/19 Proxy). President & CEO: Susan N. Story. Chairman: George MacKenzie. Address: 1 Water Street, Camden, NJ 08102. Tel.: 856-346-8200. Internet: www.amwater.com.

American Water Works enters the new decade as the most dominant member in this group. By any measure, it is the largest investor-owned water utility in the country. With its acquisition strategy and large spending budget (more below), the company should continue to grow its rate base substantially for the foreseeable future.

The consolidation of the water industry is providing the company with plenty of opportunities. The U.S. water sector is composed of thousands of small, inefficient water districts that are mostly run by local municipalities. As more capital is required to upgrade antiquated pipelines and wastewater facilities, many of these districts are looking to be acquired by larger entities. American has been buying up some of these districts every year. Its bottom line benefits from this process because economies of scale are very achievable in this space.

The projected construction program is massive. At the company's recent Investor Day, management announced that it planned on spending about $1.8 billion this year and about $21 billion over the next 10 years on expanding and improving its infrastructure. Relations with the different state regulators will remain very important as these authorities will decide what kind of return can be made on these investments. Based on the historical record, the regulatory climate should remain constructive.

Finances will likely just remain average, though. Over the past decade or so, the water utility has relied almost exclusively on debt and internally generated cash to fund the building program. With the value of the equity increasing more than sixfold during the period, the company could do well by increasing its equity base. Until this happens, we don't expect the balance sheet to stand out.

Shares of American Water Works hold our Highest (1) rank for Timeliness. Like most equities in the water utility industry, however, AWK is highly overvalued by several key financial measures. Our 18-month quantitative model also indicates that the stock will not do well. Too, total return potential to 2022-2024 is very unattractive.

James A. Flood *January 10, 2020*

(A) Diluted earnings. Excludes nonrecur. losses: '08, $4.62; '09, $2.63; '11, $0.07. Disc. oper.: '06, ($0.04); '11, $0.03; '12, ($0.10); '13,($0.01). GAAP used as of 2014. Next earnings report due mid-February. Quarterly earnings do not sum in '16 due to rounding.
(B) Dividends paid in March, June, September, and December. ■ Div. reinvestment available.
(C) In millions. **(D)** Includes intangibles. On 9/30/19: $1.650 billion, $9.13/share.
(E) Pro forma numbers for '06 & '07.

Company's Financial Strength	B+
Stock's Price Stability	100
Price Growth Persistence	85
Earnings Predictability	80

AQUA AMERICA NYSE-WTR

RECENT PRICE 47.08 | P/E RATIO 35.9 (Trailing: 67.3 Median: 22.0) | RELATIVE P/E RATIO 1.95 | DIV'D YLD 2.1% | VALUE LINE

TIMELINESS 1 Raised 12/20/19
SAFETY 2 Raised 4/20/12
TECHNICAL 3 Lowered 12/20/19
BETA .65 (1.00 = Market)

18-Month Target Price Range

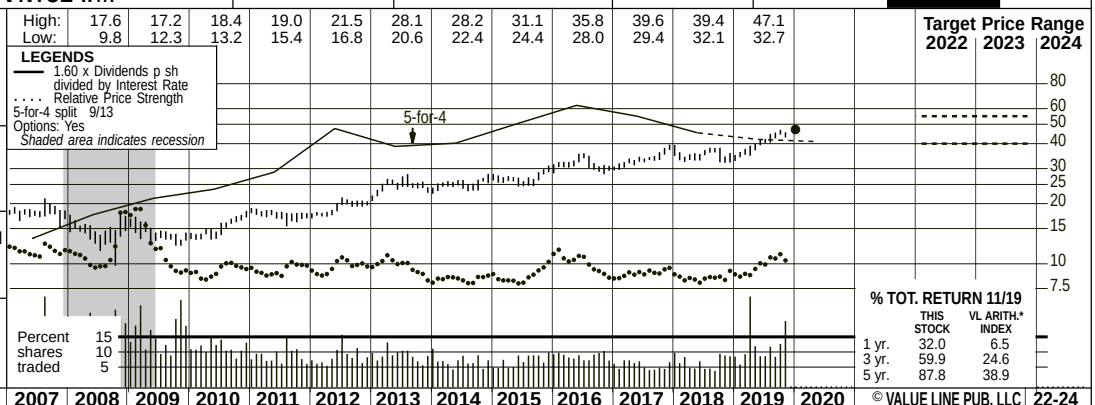
Low-High	Midpoint (% to Mid)
$34-$52	$43 (-10%)

2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	55	(+15%)	6%
Low	40	(-15%)	-1%

Institutional Decisions

	1Q2019	2Q2019	3Q2019
to Buy	238	280	248
to Sell	184	167	210
Hld's(000)	103658	140358	143792



2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
2.38	2.78	3.08	3.23	3.61	3.71	3.93	4.21	4.10	4.32	4.32	4.37	4.61	4.62	4.56	4.71	*4.10*	*4.30*	Revenues per sh	*5.70*
.77	.87	.97	1.01	1.10	1.14	1.29	1.42	1.45	1.51	1.82	1.89	1.87	2.07	2.12	1.90	*1.80*	*2.15*	"Cash Flow" per sh	*2.85*
.46	.51	.57	.56	.57	.58	.62	.72	.83	.87	1.16	1.20	1.14	1.32	1.35	1.08	*1.05*	*1.40*	Earnings per sh A	*2.00*
.28	.29	.32	.35	.38	.41	.44	.47	.50	.54	.58	.63	.69	.74	.79	.85	.91	*.96*	Div'd Decl'd per sh B■	*1.25*
1.06	1.23	1.47	1.64	1.43	1.58	1.66	1.89	1.90	1.98	1.73	1.84	2.07	2.16	2.69	2.78	*2.40*	*2.50*	Cap'l Spending per sh	*2.75*
4.27	4.71	5.04	5.57	5.85	6.26	6.50	6.81	7.21	7.90	8.63	9.27	9.78	10.43	11.02	11.28	*18.00*	*18.50*	Book Value per sh	*18.40*
154.31	158.97	161.21	165.41	166.75	169.21	170.61	172.46	173.60	175.43	177.93	178.59	176.54	177.39	177.71	178.09	*216.00*	*217.00*	Common Shs Outst'g C	*220.00*
24.5	25.1	31.8	34.7	32.0	24.9	23.1	21.1	21.3	21.9	21.2	20.8	23.5	23.9	24.7	32.6	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*24.0*
1.40	1.33	1.69	1.87	1.70	1.50	1.54	1.34	1.34	1.39	1.19	1.09	1.18	1.25	1.24	1.76			Relative P/E Ratio	*1.35*
2.5%	2.3%	1.8%	1.8%	2.1%	2.8%	3.1%	3.1%	2.8%	2.8%	2.4%	2.5%	2.6%	2.3%	2.4%	2.4%			Avg Ann'l Div'd Yield	*2.6%*
670.5	726.1	712.0	757.8	768.6	779.9	814.2	819.9	809.5	838.1	*890*	*930*	Revenues ($mill)	*1250*
104.4	124.0	144.8	153.1	205.0	213.9	201.8	234.2	239.7	192.0	*230*	*305*	Net Profit ($mill)	*440*
39.4%	39.2%	32.9%	39.0%	10.0%	10.5%	6.9%	8.2%	6.6%	6.6%	*NMF*	*5.0%*	Income Tax Rate	*7.0%*
- -	- -	- -	- -	1.1%	2.4%	3.1%	3.8%	6.3%	6.8%	*12.5%*	*10.0%*	AFUDC % to Net Profit	*10.0%*
55.6%	56.6%	52.7%	52.7%	48.9%	48.5%	50.3%	48.4%	50.6%	54.4%	*42.5%*	*43.5%*	Long-Term Debt Ratio	*53.0%*
44.4%	43.4%	47.3%	47.3%	51.1%	51.5%	49.7%	51.6%	49.4%	45.6%	*57.5%*	*56.5%*	Common Equity Ratio	*47.0%*
2495.5	2706.2	2646.8	2929.7	3003.6	3216.0	3469.5	3587.7	3965.4	4407.8	*6800*	*7100*	Total Capital ($mill)	*7600*
3227.3	3469.3	3612.9	3936.2	4167.3	4402.0	4688.9	5001.6	5399.9	5930.3	*6250*	*6525*	Net Plant ($mill)	*7600*
5.6%	5.9%	6.9%	6.6%	8.0%	7.8%	6.9%	7.6%	7.1%	5.5%	*5.0%*	*5.0%*	Return on Total Cap'l	*7.0%*
9.4%	10.6%	11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	12.2%	9.6%	*6.0%*	*8.5%*	Return on Shr. Equity	*11.0%*
9.4%	10.6%	11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	12.2%	9.6%	*6.0%*	*8.5%*	Return on Com Equity	*11.0%*
2.7%	3.7%	4.6%	4.3%	6.7%	6.1%	4.7%	5.6%	5.1%	2.1%	*4.0%*	*3.0%*	Retained to Com Eq	*4.0%*
72%	65%	60%	61%	50%	52%	60%	56%	59%	79%	*87%*	*63%*	All Div'ds to Net Prof	*63%*

CAPITAL STRUCTURE as of 9/30/19
Total Debt $3086.4 mill. **Due in 5 Yrs** $698.8 mill.
LT Debt $2898.3 mill. **LT Interest** $122.0 mill.
(43% of Cap'l)

Pension Assets-12/18 $239.0 mill.
Oblig. $282.0 mill.

Pfd Stock None
Common Stock 215,840,774 shares
as of 10/23/19

MARKET CAP: $10.2 billion (Large Cap)

CURRENT POSITION ($MILL.)	2017	2018	9/30/19
Cash Assets	4.2	3.6	2030.6
Receivables	98.6	101.2	117.0
Inventory (AvgCst)	14.4	15.8	17.0
Other	14.0	26.6	14.3
Current Assets	131.2	147.2	2178.9
Accts Payable	59.2	77.3	57.6
Debt Due	117.4	160.0	188.1
Other	107.9	161.7	106.4
Current Liab.	284.5	399.0	352.1

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	3.0%	1.5%	*3.5%*
"Cash Flow"	6.5%	5.0%	*6.5%*
Earnings	8.0%	5.5%	*8.0%*
Dividends	7.5%	8.0%	*8.0%*
Book Value	6.5%	6.5%	*9.0%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	192.6	203.9	226.6	196.8	819.9
2017	187.8	203.4	215.0	203.3	809.5
2018	194.3	211.9	226.2	205.7	838.1
2019	201.1	218.9	243.6	*226.4*	*890*
2020	*215*	*235*	*250*	*230*	*930*

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.29	.34	.41	.28	1.32
2017	.28	.34	.43	.30	1.35
2018	.29	.37	.44	d.02	1.08
2019	.09	.25	.38	*.33*	*1.05*
2020	*.25*	*.35*	*.47*	*.33*	*1.40*

Calendar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.178	.178	.1913	.1913	.74
2017	.1913	.1913	.2047	.2047	.79
2018	.2047	.2047	.219	.219	.85
2019	.219	.219	.2343	.2343	.91
2020					

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately three million residents in Pennsylvania (responsible for 53% of 2018 revenues), Ohio, Texas, Illinois, North Carolina, New Jersey, Indiana, and Virginia. Has 1,570 employees. Acquired AquaSource, 7/13; North Maine Utilities, 7/15; and others. Water supply revenues 2018: residential, 58%; commercial, 16%; industrial, wastewater & other, 26%. Off. & dir. own less than 1% of the common stock; Vanguard Group, 10.7%; Blackrock, Inc, 9.5%; State Street Capital, 4.9% (3/19 Proxy). President & Chief Executive Officer: Christopher Franklin. Inc.: PA Addr.: 762 West Lancaster Avenue, Bryn Mawr, PA 19010. Tel.: 610-525-1400. Internet: www.aquaamerica.com.

Aqua America is still awaiting final approval of its acquisition of Peoples Gas. The water utility reached an agreement to buy the regulated Pittsburgh-based natural gas company in 2018 for $4.3 billion in cash, and the assumption of $1.4 billion of debt. Because both entities operate in many different states, a host of regulators must provide permission for the transaction to be completed. Currently, our best estimate is that the purchase will close in the early part of this year.

The company will have a new profile. The natural gas distributor has almost 750,000 customers. Though this is in a sector also overseen by state authorities, the gas sector has historically had a much-more adversarial relationship with regulators. In the water segment, both utilities and regulators realize that large amounts of investment are needed to modernize the country's antiquated infrastructure. Cooperation between companies and their overseers has been very constructive. By comparison, in the gas arena, there is much resistance to construction programs such as expanding existing pipelines to meet the needs of a service area.

The balance sheet partially reflects the acquisition. To finance the transaction, a large equity offering was completed last year. More than $1.3 billion was raised in the transaction, which increased shares outstanding by about 20% (37.3 million). Proceed from the sale of tangible equity units also raised approximately $700 million. About $900 million of debt due in 2029 and 2049 was also sold last April. The remaining funds should come from existing credit facilities.

Meanwhile, another rate hike was granted. On October 29th, about $60 million in higher rates went into effect in Pennsylvania. During 2019, New Jersey, North Carolina, and Ohio also increased tariffs.

Only short-term investors should take a look here. By most financial metrics, including the P/E ratio and its yield relative to the average equity, WTR is highly overvalued. It is ranked 1 (Highest) for year-ahead performance, but our 18-month model predicts the stock will post a negative performance. In addition, total return prospects to 2022-2024 are poor.

James A. Flood *January 10, 2020*

(A) Diluted egs. Excl. nonrec. gains: '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-February.
(B) Dividends historically paid in early March, June, Sept. & Dec. ■ Div'd. reinvestment plan available (5% discount).
(C) In millions, adjusted for stock splits.
(D) Includes intangibles: 9/30/19, $52.7 mill./$0.24 a share.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	75
Earnings Predictability	65

CALIFORNIA WATER NYSE-CWT

RECENT PRICE **51.52** | P/E RATIO **31.0** (Trailing: 37.1 / Median: 22.0) | RELATIVE P/E RATIO **1.68** | DIV'D YLD **1.5%** | **VALUE LINE**

TIMELINESS 2 Raised 10/25/19
SAFETY 3 Lowered 7/27/07
TECHNICAL 3 Lowered 12/27/19
BETA .70 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$44-$69	$57 (10%)

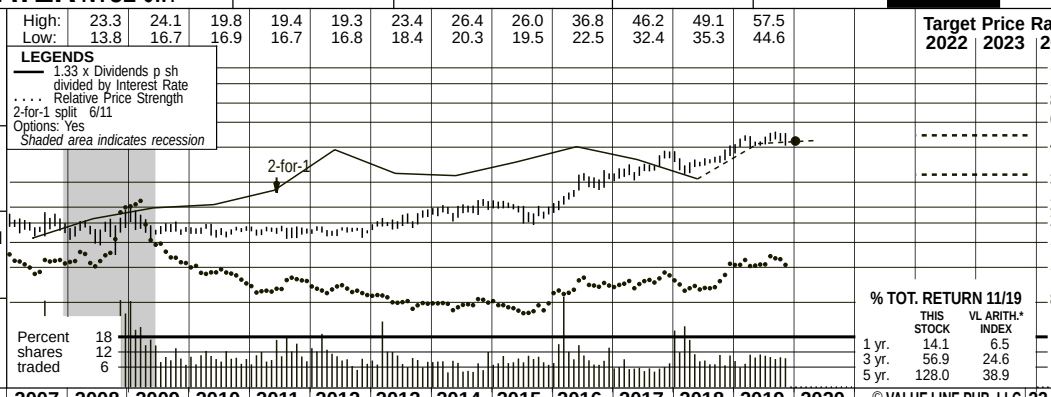
2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	55	(+5%)	3%
Low	35	(-30%)	-7%

Institutional Decisions

	1Q2019	2Q2019	3Q2019
to Buy	132	120	118
to Sell	81	102	94
Hld's(000)	35698	36947	36133

	2022	2023	2024
Target Price Range			



% TOT. RETURN 11/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	14.1	6.5
3 yr.	56.9	24.6
5 yr.	128.0	38.9

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
8.18	8.59	8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	12.29	12.70	13.89	14.53	*14.70*	*14.80*	Revenues per sh	*15.00*
1.26	1.42	1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.47	2.22	2.34	3.00	3.11	*3.05*	*3.30*	"Cash Flow" per sh	*3.50*
.61	.73	.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.40	1.36	*1.40*	*1.70*	Earnings per sh [A]	*2.00*
.56	.57	.57	.58	.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	.72	.75	.79	*.82*	Div'd Decl'd per sh [B] ■	*1.05*
2.19	1.87	2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.76	3.69	4.77	5.40	5.65	*3.95*	*4.00*	Cap'l Spending per sh	*3.65*
7.22	7.83	7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.54	13.11	13.41	13.75	14.44	15.19	*15.85*	*15.70*	Book Value per sh [C]	*16.05*
33.86	36.73	36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	47.88	47.97	48.01	48.07	*48.25*	*50.00*	Common Shs Outst'g [D]	*53.00*
22.1	20.1	24.9	29.2	26.1	19.8	19.7	20.3	21.3	17.9	20.1	19.7	24.8	29.6	26.9	30.3	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*23.0*
1.26	1.06	1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.04	1.25	1.55	1.35	1.64			Relative P/E Ratio	*1.25*
4.2%	3.9%	3.1%	2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%	2.8%	2.9%	2.3%	1.9%	1.8%			Avg Ann'l Div'd Yield	*2.5%*
449.4	460.4	501.8	560.0	584.1	597.5	588.4	609.4	666.9	698.2	*710*	*740*	Revenues ($mill) [E]	*795*
40.6	37.7	36.1	42.6	47.3	56.7	45.0	48.7	67.2	65.6	*68.0*	*85.0*	Net Profit ($mill)	*105*
40.3%	39.5%	40.5%	37.5%	30.3%	33.0%	36.0%	35.5%	30.1%	24.5%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
7.6%	4.2%	7.6%	8.0%	4.3%	2.7%	4.3%	6.1%	3.5%	3.1%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
47.1%	52.4%	51.7%	47.8%	41.6%	40.1%	44.4%	44.6%	42.7%	49.3%	*51.0%*	*47.0%*	Long-Term Debt Ratio	*39.5%*
52.9%	47.6%	48.3%	52.2%	58.4%	59.9%	55.6%	55.4%	57.3%	50.7%	*49.0%*	*53.0%*	Common Equity Ratio	*60.5%*
794.9	914.7	931.5	908.2	1024.9	1045.9	1154.4	1191.2	1209.3	1440.2	*1565*	*1485*	Total Capital ($mill)	*1400*
1198.1	1294.3	1381.1	1457.1	1515.8	1590.4	1701.8	1859.3	2048.0	2232.7	*2300*	*2385*	Net Plant ($mill)	*2500*
6.5%	5.5%	5.5%	6.3%	6.0%	6.3%	5.2%	5.5%	7.1%	5.9%	*5.0%*	*6.5%*	Return on Total Cap'l	*8.5%*
9.6%	8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	*9.0%*	*11.0%*	Return on Shr. Equity	*12.5%*
9.6%	8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	*9.0%*	*11.0%*	Return on Com Equity	*12.5%*
3.8%	3.0%	2.3%	3.4%	3.4%	4.1%	2.0%	2.4%	4.7%	4.0%	*4.0%*	*5.5%*	Retained to Com Eq	*6.0%*
60%	66%	71%	62%	56%	55%	71%	68%	51%	55%	*56%*	*48%*	All Div'ds to Net Prof	*53%*

CAPITAL STRUCTURE as of 9/30/19
Total Debt $967.9 mill. **Due in 5 Yrs** $430.1 mill.
LT Debt $807.5 mill. **LT Interest** $40.0 mill.
(Total interest coverage: 4.1x) (53% of Cap'l)

Pension Assets-12/18 $469.7 mill.
Oblig. $639.9 mill.

Pfd Stock None

Common Stock 48,145,000 shs.

MARKET CAP: $2.5 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2017	2018	9/30/19
Cash Assets	94.8	47.2	51.3
Other	133.1	141.5	160.8
Current Assets	227.9	188.7	212.1
Accts Payable	94.0	95.6	108.6
Debt Due	291.0	170.0	160.4
Other	106.0	55.6	64.9
Current Liab.	491.0	321.2	333.9

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	4.5%	2.0%	*1.5%*
"Cash Flow"	6.0%	5.0%	*3.5%*
Earnings	5.0%	5.5%	*8.0%*
Dividends	2.0%	3.0%	*6.5%*
Book Value	4.5%	4.5%	*2.0%*

QUARTERLY REVENUES ($ mill.)[E]

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	121.7	152.4	184.3	151.0	609.4
2017	122.1	171.1	211.7	162.0	666.9
2018	134.6	174.9	221.3	167.4	698.2
2019	126.1	179.0	232.5	*172.4*	*710*
2020	*140*	*185*	*237*	*178*	*740*

EARNINGS PER SHARE [A]

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	d.02	.24	.48	.31	1.01
2017	.02	.39	.70	.29	1.40
2018	d.02	.31	.75	.32	1.36
2019	d.16	.35	.88	*.33*	*1.40*
2020	*.03*	*.42*	*.85*	*.40*	*1.70*

QUARTERLY DIVIDENDS PAID [B] ■

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.1725	.1725	.1725	.1725	.69
2017	.18	.18	.18	.18	.72
2018	.1875	.1875	.1875	.1875	.75
2019	.1975	.1975	.1975	.1975	.79
2020					

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 486,900 customers in 100 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, '18: residential, 67%; business, 19%; industrial, 5%; public authorities, 5%; other 4%. Off. and dir. own 1% of common stock (4/19 proxy). Has 1,184 employees. Pres. and CEO: Martin A. Kropelnicki. Inc.: DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.calwatergroup.com.

California Water Service Group's net income rose sharply in the third quarter. Share net of $0.88 increased 17%, year over year, handily topping our $0.79 call. The solid performance was driven largely by higher rates and lower business development expenses, as these positives more than offset increased water production and operating costs. On balance, we think the water provider closed out the year with earnings of $1.40 a share. For 2020, we expect noteworthy share-net expansion, which should be supported by a healthy top-line advance.

The company's outstanding share count is poised to rise. This is due primarily to the recent initiation of a three-year equity program in which California Water will periodically sell shares of common stock at market value. The rate of issuance will depend on respective market conditions, with total gross sales not to exceed $300 million. California Water will likely use net proceeds for general corporate purposes, such as construction and acquisitions, investments, and the redemption of securities.

Long term, investment spending and rate increases are probably on tap. Indeed, management is in the early innings of its extensive capital allocation program. As previously noted, upward of $750 million has been earmarked for infrastructure upgrades, namely improvements to its water transportation systems and treatment plants. To support these initiatives, another settlement agreement was filed in October to address additional matters in its general rate case. To that end, should the Public Utilities Commission approve the agreement, California Water may be able to pass along to customers approximately $600 million-$625 million in project spending in the form of rate hikes.

The issue has been upgraded one notch for Timeliness, to 2 (Above Average), and thus it ought to appeal to near-term subscribers. Further, price upside over the 18 month stretch is worthwhile. But despite the equity's attractive business prospects, those with a 3- to 5-year holding period are better off waiting on the sidelines, as CWT is presently trading near the upper end of our Target Price Range.

Nicholas P. Patrikis *January 10, 2020*

(A) Basic EPS. Excl. nonrecurring gain (loss): '11, 4¢. Next earnings report due early Feb.
(B) Dividends historically paid in late Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available.
(C) Incl. intangible assets. In '18 : $24.7 mill., $0.51/sh.
(D) In millions, adjusted for splits.
(E) Excludes non-reg. rev.

Company's Financial Strength	B++
Stock's Price Stability	80
Price Growth Persistence	60
Earnings Predictability	65

MIDDLESEX WATER NDQ-MSEX

RECENT PRICE 63.56 | P/E RATIO 31.5 (Trailing: 32.3 Median: 21.0) | RELATIVE P/E RATIO 1.71 | DIV'D YLD 1.6% | VALUE LINE

TIMELINESS 3 Lowered 5/24/19
SAFETY 2 New 10/21/11
TECHNICAL 2 Raised 1/3/20
BETA .75 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$52-$89	$71 (10%)

2022-24 PROJECTIONS

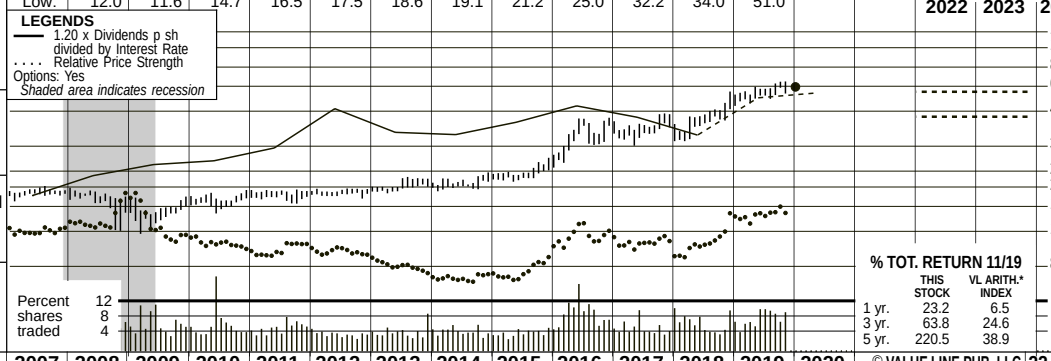
	Price	Gain	Ann'l Total Return
High	60	(-5%)	*Nil*
Low	45	(-30%)	*-6%*

Institutional Decisions

	1Q2019	2Q2019	3Q2019
to Buy	72	79	56
to Sell	67	58	67
Hld's(000)	9424	9432	9915

	High:	19.8	17.9	19.3	19.4	19.6	22.5	23.7	28.0	44.5	46.7	60.3	67.7
	Low:	12.0	11.6	14.7	16.5	17.5	18.6	19.1	21.2	25.0	32.2	34.0	51.0

LEGENDS
1.20 x Dividends p sh divided by Interest Rate
. . . . Relative Price Strength
Options: Yes
Shaded area indicates recession



% TOT. RETURN 11/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	23.2	6.5
3 yr.	63.8	24.6
5 yr.	220.5	38.9

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
6.12	6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.00	8.42	***7.70***	***8.20***	Revenues per sh	***9.15***
1.15	1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.24	2.89	***2.80***	***2.95***	"Cash Flow" per sh	***3.45***
.61	.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.38	1.96	***1.95***	***2.10***	Earnings per sh [A]	***2.45***
.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.86	.91	.98	***1.04***	Div'd Decl'd per sh [B]■	***1.15***
1.87	2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	3.08	4.40	***3.50***	***3.50***	Cap'l Spending per sh	***3.50***
7.60	8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	14.02	15.17	***15.70***	***16.15***	Book Value per sh	***17.05***
10.48	11.36	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.35	16.40	***17.50***	***17.65***	Common Shs Outst'g [C]	***18.00***
30.0	26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	28.4	22.2	***Bold figures are Value Line estimates***		Avg Ann'l P/E Ratio	***21.0***
1.71	1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.34	1.43	1.20			Relative P/E Ratio	***1.15***
3.5%	3.4%	3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.7%	3.3%	2.3%	2.2%	2.1%			Avg Ann'l Div'd Yield	***2.2%***
						91.2	102.7	102.1	110.4	114.8	117.1	126.0	132.9	130.8	138.1	***135***	***145***	Revenues ($mill)	***165***
						10.0	14.3	13.4	14.4	16.6	18.4	20.0	22.7	22.8	32.5	***34.0***	***37.0***	Net Profit ($mill)	***44.0***
						34.1%	32.1%	32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	32.7%	2.8%	***21.0%***	***21.0%***	Income Tax Rate	***21.0%***
						- -	6.8%	6.1%	3.4%	1.9%	1.7%	1.9%	2.7%	3.1%	1.4%	***2.0%***	***2.0%***	AFUDC % to Net Profit	***2.5%***
						46.6%	43.1%	42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.8%	***45.0%***	***42.5%***	Long-Term Debt Ratio	***39.5%***
						52.1%	55.8%	56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	61.8%	61.6%	***54.5%***	***57.5%***	Common Equity Ratio	***60.5%***
						267.9	310.5	312.5	316.5	321.4	335.8	345.4	355.4	370.7	404.1	***505***	***500***	Total Capital ($mill)	***510***
						376.5	405.9	422.2	435.2	446.5	465.4	481.9	517.8	557.2	618.5	***625***	***635***	Net Plant ($mill)	***650***
						5.0%	5.7%	5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	6.9%	8.9%	***7.5%***	***8.0%***	Return on Total Cap'l	***9.0%***
						7.0%	8.1%	7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	9.8%	12.9%	***12.5%***	***13.0%***	Return on Shr. Equity	***14.0%***
						7.0%	8.2%	7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	9.9%	13.0%	***12.5%***	***13.0%***	Return on Com Equity	***14.5%***
						.1%	2.1%	1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	3.8%	7.0%	***6.0%***	***6.5%***	Retained to Com Eq	***7.5%***
						98%	75%	87%	83%	73%	67%	63%	58%	62%	46%	***50%***	***49%***	All Div'ds to Net Prof	***47%***

CAPITAL STRUCTURE as of 9/30/19
Total Debt $294.0 mill. **Due in 5 Yrs** $65.7 mill.
LT Debt $228.3 mill. **LT Interest** $6.8 mill.
(Total interest coverage: 8.5x)
(45% of Cap'l)

Pension Assets-12/18 $66.8 mill.
Oblig. $83.9 mill.
Pfd Stock $2.4 mill. **Pfd Div'd:** $.1 mill.

Common Stock 16,669,540 shs.
as of 10/31/19

MARKET CAP: $1.1 billion (Mid-Cap)

CURRENT POSITION ($MILL.)	2017	2018	9/30/19
Cash Assets	4.9	3.7	3.2
Other	24.3	27.1	31.5
Current Assets	29.2	30.8	34.7
Accts Payable	13.9	19.3	20.2
Debt Due	34.9	55.8	65.7
Other	15.7	19.3	17.6
Current Liab.	64.5	94.4	103.5

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	2.5%	3.5%	*2.0%*
"Cash Flow"	5.5%	9.0%	*6.5%*
Earnings	6.0%	11.0%	*7.5%*
Dividends	2.0%	3.0%	*5.0%*
Book Value	3.5%	4.5%	*3.0%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2016	30.6	32.7	37.8	31.8	132.9
2017	30.1	33.0	36.2	31.5	130.8
2018	31.2	34.9	38.7	33.3	138.1
2019	30.7	33.4	37.8	***33.1***	***135***
2020	***32.0***	***36.0***	***42.0***	***35.0***	***145***

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2016	.29	.36	.54	.19	1.38
2017	.27	.33	.46	.32	1.38
2018	.27	.52	.74	.43	1.96
2019	.39	.49	.66	***.41***	***1.95***
2020	***.40***	***.55***	***.70***	***.45***	***2.10***

Calendar	QUARTERLY DIVIDENDS PAID [B]■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.19875	.19875	.19875	.21125	.81
2017	.21125	.21125	.21125	.22375	.86
2018	.22375	.22375	.22375	.24	.91
2019	.24	.24	.24	.2562	.98
2020					

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 61,000 retail customers, primarily in Middlesex County, New Jersey. In 2018, the Middlesex System accounted for 59% of operating revenues. At 12/31/18, the company had 330 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.5% of the com. stock; BlackRock Inst. Trust Co., 6.8% (4/19 proxy). Add.: 485 C Route 1 South, Suite 400, Iselin, NJ 08830. Tel.: 732-634-1500. Int.: www.middlesexwater.com.

Middlesex Water Company has tapped the equity markets. The company recently finalized a public offering of approximately 760,000 shares of common stock at a price of $60.50 per share (includes additional shares purchased by underwriters). Middlesex received total net proceeds of $43.8 million, which have been earmarked for a number of efforts, including general corporate purposes, paying off short-term obligations, completing acquisitions, and funding the continuation of infrastructure investment initiatives.

We are moderately tempering our 2019 and 2020 earnings forecasts. The Northeast water and wastewater operator saw net income contract year-over-year in the third quarter, to $0.66 per share, partly due to weaker revenues stemming from softer water consumption related to unfavorable weather. Operating expenses were essentially unchanged, on an annual basis. All told, we are slicing a nickel and a dime off our 2019 and 2020 share-net estimates, to $1.95 and $2.10, respectively.

Middlesex shares may be cooling off a bit. The stock price pulled back modestly since our last report, despite stamping a fresh all-time high in late October. For much of 2019, the stock has traded in a relatively tight range. Indeed, investors may be starting to take some profits off the table following several years of strong price appreciation and the recent dilution.

The board of directors increased the quarterly payout 7%, to $0.2562 per share. While consistent dividend hikes are reassuring, at current levels, this equates to an annual yield of about 1.6%, which does not necessarily jump out to the income-seeking crowd.

What about Middlesex stock? The company is in decent shape from a fundamental perspective, and long-term business prospects should be enhanced by multiple catalysts, such as an expanding customer base (particularly in Delaware), periodic rate increases, and strong infrastructure spending. However, the issue is presently void of investment appeal. Middlesex shares are just an average selection for relative year-ahead price performance, and most of the gains we envision three to five years out appear to already be baked into the recent quotation.

Nicholas P. Patrikis *January 10, 2020*

(A) Diluted earnings. Next earnings report due late January.

(B) Dividends historically paid in mid-Feb., May, Aug., and November.■ Div'd reinvestment plan available.

(C) In millions.

Company's Financial Strength	B++
Stock's Price Stability	65
Price Growth Persistence	55
Earnings Predictability	75

SJW GROUP NYSE-SJW

RECENT PRICE 71.79 | P/E RATIO 44.3 (Trailing: 51.6 Median: 21.0) | RELATIVE P/E RATIO 2.41 | DIV'D YLD 1.7% | VALUE LINE

TIMELINESS — Suspended 5/4/18
SAFETY 3 New 4/22/11
TECHNICAL — Suspended 5/4/18
BETA .60 (1.00 = Market)

18-Month Target Price Range

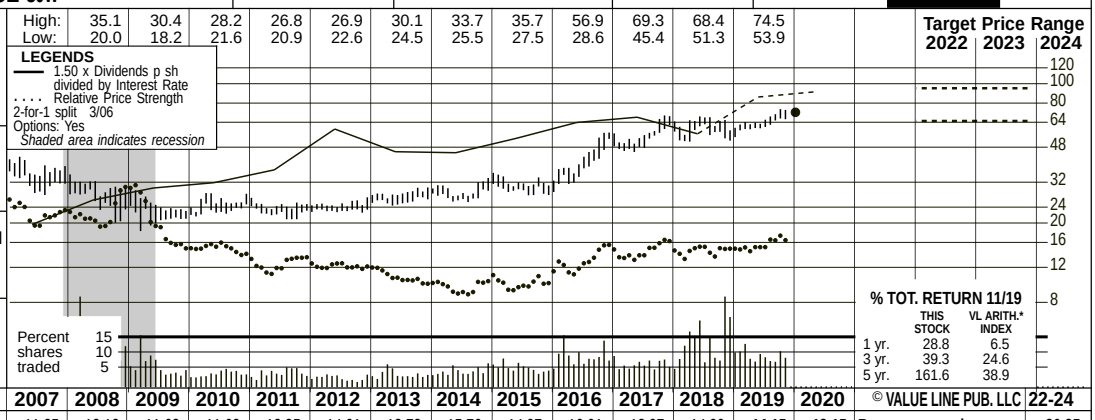
Low-High	Midpoint (% to Mid)
$51-$85	$68 (-5%)

2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	95	(+30%)	9%
Low	65	(-10%)	Nil

Institutional Decisions

	1Q2019	2Q2019	3Q2019
to Buy	88	91	94
to Sell	71	62	69
Hld's(000)	19349	19526	19354



2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
8.20	9.14	9.86	10.35	11.25	12.12	11.68	11.62	12.85	14.01	13.73	15.76	14.97	16.61	18.97	14.00	*14.15*	*18.15*	Revenues per sh	*20.85*
1.75	1.89	2.21	2.38	2.30	2.44	2.21	2.38	2.80	2.97	2.90	4.42	3.86	4.76	5.24	3.29	*3.15*	*4.15*	"Cash Flow" per sh	*5.30*
.91	.87	1.12	1.19	1.04	1.08	.81	.84	1.11	1.18	1.12	2.54	1.85	2.57	2.86	1.82	*1.45*	*2.45*	Earnings per sh [A]	*3.65*
.49	.51	.53	.57	.61	.65	.66	.68	.69	.71	.73	.75	.78	.81	1.04	1.12	1.20	*1.28*	Div'd Decl'd per sh [B]■	*1.50*
3.41	2.31	2.83	3.87	6.62	3.79	3.17	5.65	3.75	5.67	4.68	5.02	5.24	6.95	7.26	5.08	*5.00*	*5.25*	Cap'l Spending per sh	*5.25*
9.11	10.11	10.72	12.48	12.90	13.99	13.66	13.75	14.20	14.71	15.92	17.75	18.83	20.61	22.57	31.31	*31.20*	*32.70*	Book Value per sh	*38.35*
18.27	18.27	18.27	18.28	18.36	18.18	18.50	18.55	18.59	18.67	20.17	20.29	20.38	20.46	20.52	28.40	*29.00*	*29.50*	Common Shs Outst'g [C]	*30.00*
15.4	19.6	19.7	23.5	33.4	26.2	28.7	29.1	21.2	20.4	24.3	11.2	16.6	15.7	18.8	32.7	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*22.0*
.88	1.04	1.05	1.27	1.77	1.58	1.91	1.85	1.33	1.30	1.37	.59	.84	.82	.95	1.76			Relative P/E Ratio	*1.20*
3.5%	3.0%	2.4%	2.0%	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.6%	2.5%	2.0%	1.9%	1.9%			Avg Ann'l Div'd Yield	*1.9%*
216.1	215.6	239.0	261.5	276.9	319.7	305.1	339.7	389.2	397.7	*410*	*535*	Revenues ($mill)	*625*
15.2	15.8	20.9	22.3	23.5	51.8	37.9	52.8	59.2	38.8	*42.0*	*72.0*	Net Profit ($mill)	*110*
40.4%	38.8%	41.1%	41.1%	38.7%	32.5%	38.1%	38.8%	36.7%	20.6%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
2.0%	--	--	--	--	--	--	--	2.0%	1.0%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
49.4%	53.7%	56.6%	55.0%	51.1%	51.6%	49.8%	50.7%	48.2%	32.7%	*36.5%*	*35.0%*	Long-Term Debt Ratio	*32.5%*
50.6%	46.3%	43.4%	45.0%	48.9%	48.4%	50.2%	49.3%	51.8%	67.3%	*63.5%*	*65.0%*	Common Equity Ratio	*67.5%*
499.6	550.7	607.9	610.2	656.2	744.5	764.6	855.0	894.3	1320.7	*1420*	*1490*	Total Capital ($mill)	*1700*
718.5	785.5	756.2	831.6	898.7	963.0	1036.8	1146.4	1239.3	1328.8	*1365*	*1400*	Net Plant ($mill)	*1500*
4.4%	4.3%	4.9%	5.0%	5.0%	8.3%	6.3%	7.4%	7.9%	3.9%	*4.0%*	*5.5%*	Return on Total Cap'l	*7.0%*
6.0%	6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	*4.5%*	*7.5%*	Return on Shr. Equity	*9.5%*
6.0%	6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	*4.5%*	*7.5%*	Return on Com Equity	*9.5%*
1.2%	1.2%	3.1%	3.3%	2.8%	10.2%	5.7%	8.6%	8.2%	1.8%	*1.0%*	*3.5%*	Retained to Com Eq	*5.5%*
80%	80%	61%	59%	62%	29%	42%	31%	36%	60%	*83%*	*52%*	All Div'ds to Net Prof	*41%*

CAPITAL STRUCTURE as of 9/30/19
Total Debt $511.1 mill. **Due in 5 Yrs** $14.3 mill.
LT Debt $511.1 mill. **LT Interest** $20.0 mill.
(LT Interest Coverage: 7.1x)
(37% of Cap'l)

Leases, Uncapitalized: Annual rentals $4.4 mill.

Pension Assets-12/18 $127.6 mill.
Oblig. $187.9 mill.

Pfd Stock None.
Common Stock 28,456,490 shs.
as of 10/28/19
MARKET CAP: $2.0 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2017	2018	9/30/19
Cash Assets	7.8	420.7	424.7
Accts Receivable	17.3	19.2	28.0
Other	41.8	62.8	55.1
Current Assets	66.9	502.7	507.8
Accts Payable	23.0	24.9	28.2
Debt Due	--	--	--
Other	62.1	139.1	116.1
Current Liab.	85.1	164.0	144.3

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	5.0%	5.5%	*4.0%*
"Cash Flow"	7.0%	11.0%	*3.0%*
Earnings	8.0%	18.5%	*7.0%*
Dividends	4.5%	5.0%	*7.0%*
Book Value	5.5%	8.0%	*7.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2016	61.1	86.9	112.3	79.4	339.7
2017	69.0	102.1	124.6	93.5	389.2
2018	75.0	99.1	124.9	98.7	397.7
2019	77.7	103.0	114.0	*115*	*410*
2020	*105*	*135*	*170*	*125*	*535*

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2016	.16	.82	.92	.67	2.57
2017	.18	.90	.94	.84	2.86
2018	.06	.62	.76	.38	1.82
2019	.21	.47	.33	*.44*	*1.45*
2020	*.20*	*.65*	*.95*	*.65*	*2.45*

Calendar	QUARTERLY DIVIDENDS PAID [BD]■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.2025	.2025	.2025	.2025	.81
2017	.2175	.2175	.2175	.3875	1.04
2018	.28	.28	.28	.28	1.12
2019	.30	.30	.30	.30	1.20
2020					

BUSINESS: SJW Group engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 231,000 connections with a total population of roughly one million people in the San Jose area and 16,000 connections that reach about 49,000 residents in the region between San Antonio and Austin, Texas. The company merged with Connecticut Water (10/19) which provides service to approx. 138,000 connections with total population of 450,000 people. Has about 416 employees. Officers and directors own 8.2% of outstanding shares (3/19 proxy). Chairman & CEO: Richard Roth. Incorporated: California. Address: 110 West Taylor Street, San Jose, CA 95110. Telephone: (408) 279-7800. Internet: www.sjwater.com.

SJW Group completed the purchase of Connecticut Water Service in October of 2019. The $70-per-share all-cash transaction took nearly a year to close after both entities finally received the nod from their respective regulatory agencies. The third-largest investor-owned regulated water and wastewater provider now caters to roughly 1.5 million people across the U.S. Moreover, Connecticut Water is well represented on the board of directors, as three former directors have been given seats on SJW Group's board.

Accordingly, we are lifting our 2020 financial projections to reflect the deal. The company probably ended 2019 on a mixed note. Added revenues from Connecticut operations may be partially offset by a recent ruling on SJW's conservation memorandum account balance. Nevertheless, the stage is set for a promising 2020, in our view. We now look for revenues of $535 million and earnings of $2.45 a share this year.

SJW Group hopes to deploy advanced metering services to its customers over the next several years. Specifically, the company recently filed an application with the California Public Utilities Commission to deploy Advanced Metering Infrastructure, a technology that can provide essential water usage information to customers on an hourly basis rather than once every two months. Near real-time water consumption data, early leak detection, and usage spike notifications ought to help customers meet California's revised state conservation standards (takes effect in 2022), which are vital given that the area is prone to extreme drought conditions. Further, the AMI program will likely be accompanied by additional infrastructure investment (upgrades to water filtration systems, treatment plants, and pipelines) over the pull to 2022-2024.

The issue remains suspended for Timeliness given the recent merger. SJW Group's expanded operational footprint augurs well for long-term business prospects. Also, given that the market continues to print record highs, we think a rotation into noncyclical, defensive assets could develop. Even so, we are not recommending capital commitments at the recently elevated valuation.

Nicholas P. Patrikis *January 10, 2020*

(A) Diluted earnings. Excludes nonrecurring losses: '03, $1.97; '04, $3.78; '05, $1.09; '06, $16.36; '08, $1.22; '10, $0.46. GAAP accounting as of 2013. Next earnings report due early February. 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.
(D) Paid special dividend of $0.17 per share on 11/17.

Company's Financial Strength	B+
Stock's Price Stability	75
Price Growth Persistence	60
Earnings Predictability	45

YORK WATER NDQ-YORW

RECENT PRICE 46.38 | P/E RATIO 39.3 (Trailing: 40.7 Median: 25.0) | RELATIVE P/E RATIO 2.14 | DIV'D YLD 1.6% | VALUE LINE

TIMELINESS 1 Raised 10/11/19
SAFETY 3 Lowered 7/17/15
TECHNICAL 3 Raised 1/3/20
BETA .70 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$32-$52	$42 (-10%)

2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	45	(-5%)	*1%*
Low	30	(-35%)	*-7%*

Institutional Decisions

	1Q2019	2Q2019	3Q2019
to Buy	33	48	55
to Sell	40	31	30
Hld's(000)	4794	4866	5111

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
2.17	2.18	2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21	3.27	3.58	3.68	3.70	3.77	3.74	***3.95***	***4.05***	Revenues per sh	***5.10***
.65	.65	.79	.77	.86	.88	.95	1.07	1.09	1.12	1.19	1.36	1.45	1.42	1.53	1.58	***1.75***	***1.80***	"Cash Flow" per sh	***2.50***
.47	.49	.56	.58	.57	.57	.64	.71	.71	.72	.75	.89	.97	.92	1.01	1.04	***1.15***	***1.20***	Earnings per sh [A]	***1.70***
.37	.39	.42	.45	.48	.49	.51	.52	.53	.54	.55	.57	.60	.63	.65	.67	.70	***.73***	Div'd Decl'd per sh [B]	***.95***
1.07	2.50	1.69	1.85	1.69	2.17	1.18	.83	.74	.94	.76	1.10	1.11	1.03	1.95	1.95	***2.00***	***2.00***	Cap'l Spending per sh	***1.85***
4.06	4.65	4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.98	8.15	8.51	8.88	9.28	9.75	***10.40***	***11.25***	Book Value per sh	***12.10***
9.63	10.33	10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92	12.98	12.83	12.81	12.85	12.87	12.94	***13.00***	***12.90***	Common Shs Outst'g [C]	***12.80***
24.5	25.7	26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4	26.3	23.1	23.5	32.8	34.6	30.3	***Bold figures are Value Line estimates***		Avg Ann'l P/E Ratio	***22.5***
1.40	1.36	1.40	1.68	1.61	1.48	1.46	1.32	1.50	1.55	1.48	1.22	1.18	1.72	1.74	1.63			Relative P/E Ratio	***1.25***
3.2%	3.1%	2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.8%	2.8%	2.6%	2.1%	1.9%	2.1%			Avg Ann'l Div'd Yield	***2.5%***
37.0	39.0	40.6	41.4	42.4	45.9	47.1	47.6	48.6	48.4	***51.5***	***52.5***	Revenues ($mill)	***65.0***
7.5	8.9	9.1	9.3	9.7	11.5	12.5	11.8	13.0	13.4	***14.9***	***15.5***	Net Profit ($mill)	***21.5***
37.9%	38.5%	35.3%	37.6%	37.6%	29.8%	27.5%	31.3%	25.9%	15.7%	***21.0%***	***21.0%***	Income Tax Rate	***21.0%***
- -	1.2%	1.1%	1.1%	.8%	1.8%	1.6%	1.9%	6.7%	1.7%	***2.0%***	***1.5%***	AFUDC % to Net Profit	***1.5%***
45.7%	48.3%	47.1%	46.0%	45.1%	44.8%	44.4%	42.6%	43.0%	42.5%	***40.0%***	***37.0%***	Long-Term Debt Ratio	***34.0%***
54.3%	51.7%	52.9%	54.0%	54.9%	55.2%	55.6%	57.4%	57.0%	57.5%	***60.0%***	***63.0%***	Common Equity Ratio	***66.0%***
160.1	176.4	180.2	184.8	188.4	189.4	196.3	198.7	209.5	219.5	***225***	***230***	Total Capital ($mill)	***235***
222.0	228.4	233.0	240.3	244.2	253.2	261.4	270.9	288.8	299.2	***305***	***315***	Net Plant ($mill)	***325***
6.2%	6.5%	6.4%	6.4%	6.5%	7.4%	7.6%	7.2%	7.5%	7.3%	***7.5%***	***8.0%***	Return on Total Cap'l	***10.5%***
8.6%	9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	***11.0%***	***10.5%***	Return on Shr. Equity	***14.0%***
8.6%	9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	***11.0%***	***10.5%***	Return on Com Equity	***14.0%***
1.9%	2.7%	2.5%	2.4%	2.4%	3.9%	4.4%	3.4%	4.0%	3.8%	***4.5%***	***4.0%***	Retained to Com Eq	***6.0%***
78%	72%	73%	74%	74%	64%	62%	67%	63%	64%	***61%***	***61%***	All Div'ds to Net Prof	***56%***

CAPITAL STRUCTURE as of 9/30/19
Total Debt $100.7 mill. **Due in 5 Yrs** $42.5 mill.
LT Debt $94.2 mill. **LT Interest** $5.5 mill.

(43% of Cap'l)

Pension Assets12/18 $40.6 mill.
Oblig. $41.5 mill.

Pfd Stock None

Common Stock 12,984,826 shs.

MARKET CAP: $600 million (Small Cap)

CURRENT POSITION ($MILL.)	2017	2018	9/30/19
Cash Assets	- -	- -	- -
Accounts Receivable	4.5	4.8	4.5
Inventory (Avg. Cost)	.9	.9	1.0
Other	3.2	3.3	4.4
Current Assets	8.6	9.0	9.9
Accts Payable	3.1	3.0	4.8
Debt Due	- -	1.0	6.5
Other	6.0	6.8	5.6
Current Liab.	9.1	10.8	16.9

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	3.0%	3.0%	*5.5%*
"Cash Flow"	6.0%	6.0%	*9.0%*
Earnings	5.5%	6.5%	*9.5%*
Dividends	3.5%	4.0%	*6.5%*
Book Value	4.5%	4.0%	*4.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2016	11.3	11.8	12.6	11.9	47.6
2017	11.3	12.3	12.7	12.3	48.6
2018	11.6	12.0	12.7	12.1	48.4
2019	11.8	13.0	13.7	***13.0***	***51.5***
2020	***12.2***	***13.0***	***14.0***	***13.3***	***52.5***

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2016	.19	.23	.27	.23	.92
2017	.20	.23	.31	.27	1.01
2018	.20	.26	.29	.29	1.04
2019	.22	.28	.35	***.30***	***1.15***
2020	***.23***	***.30***	***.35***	***.32***	***1.20***

Calendar	QUARTERLY DIVIDENDS PAID [B] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.1555	.1555	.1555	.1602	.627
2017	.1602	.1602	.1602	.1666	.647
2018	.1666	.1666	.1666	.1733	.673
2019	.1733	.1733	.1733	.1802	.70
2020					

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, 2018, the company's average daily availability was 35.4 million gallons and its service territory had an estimated population of 199,000. Has more than 69,000 customers. Residential customers accounted for 65% of 2018 revenues; commercial and industrial (28%); other (7%). It also provides sewer billing services. Incorporated: PA. York had 109 full-time employees at 12/31/18. President/CEO: Jeffrey R. Hines. Officers/directors own 1.2% of the common stock (3/19 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

York Water Company posted good results for the September period. Notably, revenues of $13.7 million rose nearly 8% year over year, easily topping our $13.2 million call. A number of drivers underpinned the outperformance, including increased rates (most recent base rate hike was March 1, 2019), solid customer growth, as well as higher per capita consumption. These tailwinds outweighed weaker contributions from improvement charges. On the earnings front, the company delivered net income of $0.35 a share, or 21% better than the previous-year tally. Greater revenues and lower taxes owing to higher allowed deductions from the IRS tangible property regulations helped mitigate a modest rise in operation and maintenance expenses.

The company likely closed out the year earning $1.15 a share from $51.5 million in revenues. Given the recent showing, we have added $1 million and $0.05 a share to our current-year top- and bottom-line estimates, respectively.

Infrastructure upgrades are on track. For 2019, York likely spent upwards of $18.0 million, excluding acquisitions, on dam construction, pipe and valve replacements, and other improvements. As we move deeper into this decade, it's probable that leadership will continue to focus on upgrades to ensure safe wastewater management and reliable water delivery to its expanding customer base.

The stock remains in favor among the investment community. Indeed, York shareholders have enjoyed a fruitful 2019 thus far, as the stock is up almost 50% in price year to date. Over the past three months, shares have appreciated approximately 7% in value, etching a fresh high-water mark along the way. We continue to recommend subscribers with a short-term view have a look here, as this timely (1: Highest) issue may still have some room to run over the coming six to 12 months.

But those with an eye toward the long pull should hold off at this juncture. As a result of the recent share-price ascent, capital appreciation potential three to five years hence is unappealing. Further, despite annual payout hikes, the dividend yield has struggled to keep pace with historical averages.

Nicholas P. Patrikis *January 10, 2020*

(A) Diluted earnings. Next earnings report due late January.
(B) Dividends historically paid in late February, June, September, and December.
(C) In millions, adjusted for split.

Company's Financial Strength	B+
Stock's Price Stability	60
Price Growth Persistence	70
Earnings Predictability	95

EXHIBIT DWD-4

EPCOR Water Arizona Inc.
Summary of Risk Premium Models for the
Proxy Group of Seven Water Companies

	Proxy Group of Seven Water Companies	
Predictive Risk Premium Model (PRPM) (1)	11.62	%
Risk Premium Using an Adjusted Total Market Approach (2)	9.25	%
Average	10.44	%

Notes:
(1) From page 2 of this Exhibit.
(2) From page 3 of this Exhibit.

EPCOR Water Arizona Inc.
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

Proxy Group of Seven Water Companies	[1] LT Average Predicted Variance	[2] Spot Predicted Variance	[3] Recommended Variance	[4] GARCH Coefficient	[5] Predicted Risk Premium (2)	[6] Risk-Free Rate (3)	[7] Indicated ROE (4)
American States Water Co.	0.38%	0.42%	0.40%	1.96035	9.77%	2.68%	12.45%
American Water Works Company Inc	NMF	NMF	NMF	6.50316	NMF	2.68%	NMF
Aqua America	0.44%	0.26%	0.35%	2.39855	10.51%	2.68%	13.19%
California Water Service Group	0.32%	0.31%	0.31%	2.00195	7.74%	2.68%	10.42%
Middlesex Water Co.	0.30%	0.25%	0.27%	2.18682	7.41%	2.68%	10.09%
SJW Group	0.41%	0.34%	0.38%	1.62252	7.56%	2.68%	10.24%
York Water Co.	0.45%	0.36%	0.40%	2.29628	11.68%	2.68%	14.36%
						Average	11.79%
						Median	11.44%
						Average of Mean and Median	11.62%

NMF = Not Meaningful Figure

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 Bloomberg Professional Service.

(2) (1+(Column [3] * Column [4]) ^12) - 1.

(3) From note 2 on page 2 of Exhibit DWD-5.

(4) Column [5] + Column [6].

EPCOR Water Arizona Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Seven Water Companies	
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	3.66	%
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	0.36	(2)
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	4.02	%
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.05	(3)
5.	Adjusted Prospective Bond Yield	4.07	%
6.	Equity Risk Premium (4)	5.18	
7.	Risk Premium Derived Common Equity Cost Rate	9.25	%

Notes:
(1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 10-11 of this Exhibit).
(2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.36% from page 4 of this Exhibit.
(3) Adjustment to reflect the A2/A3 Moody's LT issuer rating of the Utility Proxy Group as shown on page 5 of this Exhibit. The 0.05% upward adjustment is derived by taking 1/6 of the spread between A2 and Baa2 Public Utility Bonds (1/6 * 0.32% = 0.05%) as derived from page 4 of this Exhibit.
(4) From page 7 of this Exhibit.

EPCOR Water Arizona Inc.
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
Jan-2020	2.82 %	3.13 %	3.44 %
Dec-2019	3.01	3.40	3.73
Nov-2019	3.06	3.42	3.76
Average	2.96 %	3.32 %	3.64 %

Selected Bond Spreads

A Rated Public Utility Bonds Over Aaa Rated Corporate Bonds: 0.36 % (1)

Baa Rated Public Utility Bonds Over A Rated Public Utility Bonds: 0.32 % (2)

Notes:
(1) Column [2] - Column [1].
(2) Column [3] - Column [2].

Source of Information:
Bloomberg Professional Service

EPCOR Water Arizona Inc.
Comparison of Long-Term Issuer Ratings for
Proxy Group of Seven Water Companies

	Moody's Long-Term Issuer Rating January 2020		Standard & Poor's Long-Term Issuer Rating January 2020	
Proxy Group of Seven 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 Company Inc (3)	A3	7.0	A	6.0
Aqua America, Inc. (4)	NR	- -	A	6.0
California Water Service Group (5)	NR	- -	A+	5.0
Middlesex Water Co.	NR	- -	A	6.0
SJW Corp. (6)	NR	- -	A/A-	6.5
York Water Co.	NR	- -	A-	7.0
Average	A2/A3	6.5	A	5.9

Notes:

(1) From page 6 of this Exhibit.
(2) Ratings that of Golden State Water Company.
(3) Ratings that of New Jersey and Pennsylvania American Water Companies.
(4) Ratings that of Aqua Pennsylvania, Inc.
(5) Ratings that of California Water Service Company.
(6) Ratings that of San Jose Water Company and The Connecticut Water Company

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-
B1	14	B+
B2	15	B
B3	16	B-

EPCOR Water Arizona Inc.
Judgment of Equity Risk Premium for
Proxy Group of Seven Water Companies

Line No.		Proxy Group of Seven Water Companies
1.	Calculated equity risk premium based on the total market using the beta approach (1)	5.29 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	5.07
3.	Average equity risk premium	5.18 %

Notes: (1) From page 8 of this Exhibit.
(2) From page 12 of this Exhibit.

EPCOR Water Arizona Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Seven Water Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Seven Water Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.54 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.63
3.	Ibbotson Equity Risk Premium based on PRPM (3)	7.22
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	8.03
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	10.85
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	10.07
7.	Conclusion of Equity Risk Premium	8.39 %
8.	Adjusted Beta (7)	0.63
9.	Forecasted Equity Risk Premium	5.29 %

Notes provided on page 9 of this Exhibit.

EPCOR Water Arizona Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Seven Water Companies

Notes:

(1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2019 Market Report minus the arithmetic mean monthly yield of Moody's average Aaa and Aa corporate bonds from 1926-2018.

(2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa rated corporate bond yields from 1928-2018 referenced in Note 1 above.

(3) The Predictive Risk Premium Model (PRPM) is discussed in the 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 and average Aaa and Aa corporate monthly bond yields, from January 1928 through December 2019.

(4) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 3.66% (from page 3 of this Exhibit) from the projected 3-5 year total annual market return of 11.69% (described fully in note 1 on page 2 of Exhibit DWD-5).

(5) Using data from Value Line for the S&P 500, an expected total return of 14.51% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.66% results in an expected equity risk premium of 10.85%.

(6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 13.73% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.66% results in an expected equity risk premium of 10.07%.

(7) Average of mean and median beta from Exhibit DWD-5.

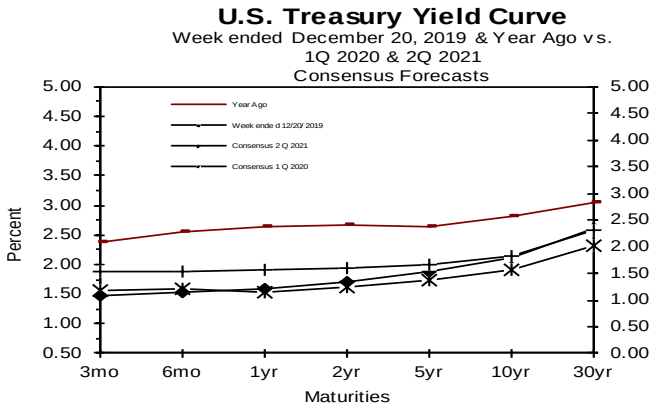
Sources of Information:

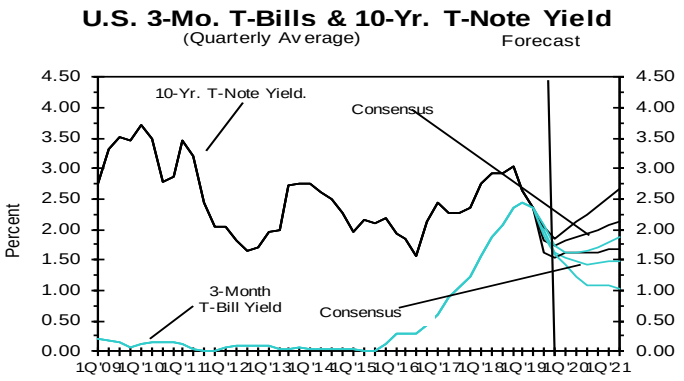
Stocks, Bonds, Bills, and Inflation - 2019 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, February 1, 2020 and December 1, 2019
Bloomberg Professional Service

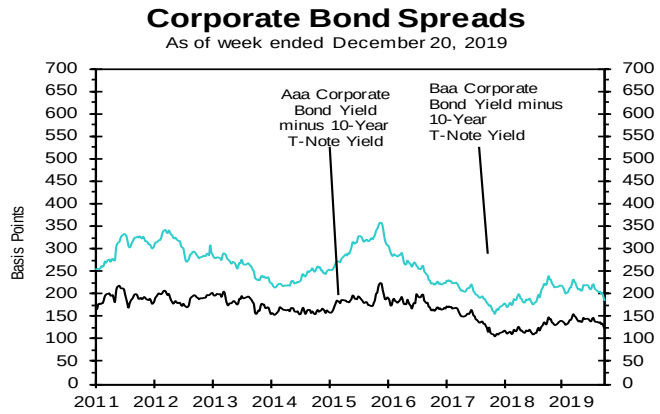
Consensus Forecasts of U.S. Interest Rates and Key Assumptions

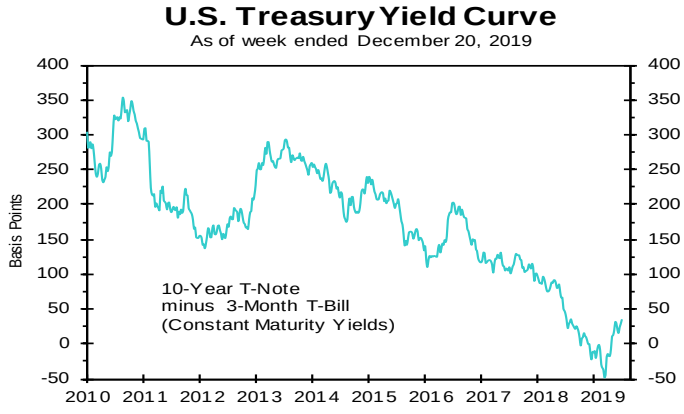
	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			*Latest Qtr*	1Q	2Q	3Q	4Q	1Q	2Q
Interest Rates	Jan 24	Jan 17	Jan 10	Jan 3	Dec	Nov	Oct	4Q 2019	2020	2020	2020	2020	2021	2021
Federal Funds Rate	1.55	1.54	1.55	1.55	1.55	1.55	1.83	1.64	**1.6**	**1.6**	**1.5**	**1.5**	**1.5**	**1.5**
Prime Rate	4.75	4.75	4.75	4.75	4.75	4.75	4.99	4.83	**4.8**	**4.7**	**4.7**	**4.6**	**4.6**	**4.6**
LIBOR, 3-mo.	1.80	1.83	1.85	1.90	1.91	1.90	1.98	1.93	**1.8**	**1.8**	**1.8**	**1.7**	**1.7**	**1.8**
Commercial Paper, 1-mo.	1.55	1.55	1.57	1.58	1.62	1.62	1.86	1.70	**1.6**	**1.6**	**1.6**	**1.6**	**1.6**	**1.6**
Treasury bill, 3-mo.	1.55	1.56	1.54	1.55	1.57	1.57	1.68	1.61	**1.6**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**
Treasury bill, 6-mo.	1.56	1.57	1.56	1.58	1.58	1.59	1.67	1.61	**1.6**	**1.6**	**1.5**	**1.5**	**1.5**	**1.5**
Treasury bill, 1 yr.	1.55	1.54	1.54	1.57	1.55	1.57	1.61	1.58	**1.6**	**1.6**	**1.6**	**1.6**	**1.6**	**1.6**
Treasury note, 2 yr.	1.52	1.58	1.56	1.57	1.61	1.61	1.55	1.59	**1.6**	**1.6**	**1.6**	**1.6**	**1.7**	**1.7**
Treasury note, 5 yr.	1.55	1.63	1.64	1.66	1.68	1.64	1.53	1.62	**1.6**	**1.7**	**1.7**	**1.8**	**1.8**	**1.9**
Treasury note, 10 yr.	1.75	1.82	1.84	1.88	1.86	1.81	1.71	1.79	**1.8**	**1.8**	**1.9**	**2.0**	**2.0**	**2.1**
Treasury note, 30 yr.	2.19	2.27	2.32	2.33	2.30	2.28	2.19	2.26	**2.3**	**2.3**	**2.4**	**2.4**	**2.5**	**2.6**
Corporate Aaa bond	3.02	3.09	3.14	3.12	3.12	3.16	3.11	3.13	**3.1**	**3.3**	**3.4**	**3.5**	**3.5**	**3.6**
Corporate Baa bond	3.62	3.70	3.77	3.75	3.78	3.86	3.86	3.83	**4.0**	**4.1**	**4.2**	**4.3**	**4.4**	**4.5**
State & Local bonds	2.98	3.01	3.04	3.09	3.10	3.15	3.14	3.13	**2.9**	**3.0**	**3.0**	**3.1**	**3.2**	**3.2**
Home mortgage rate	3.60	3.65	3.64	3.72	3.72	3.70	3.69	3.70	**3.7**	**3.7**	**3.8**	**3.8**	**3.9**	**3.9**
	History								Consensus Forecasts-Quarterly					
	1Q	2Q	3Q	4Q	1Q	2Q	*3Q*	*4Q*	1Q	2Q	3Q	4Q	1Q	2Q
Key Assumptions	2018	2018	2018	2018	2019	2019	*2019*	*2019*	2020	2020	2020	2020	2021	2021
Fed's AFE $ Index	102.9	105.5	107.8	109.4	109.4	110.3	110.5	110.3	**109.4**	**108.7**	**108.3**	**108.0**	**108.0**	**107.9**
Real GDP	2.5	3.5	2.9	1.1	3.1	2.0	2.1	2.1	**1.5**	**1.9**	**1.9**	**2.0**	**1.9**	**2.0**
GDP Price Index	2.3	3.2	2.0	1.6	1.1	2.4	1.8	1.4	**1.9**	**2.0**	**2.0**	**2.0**	**2.0**	**2.1**
Consumer Price Index	3.2	2.1	2.0	1.5	0.9	2.9	1.8	2.6	**2.0**	**2.0**	**2.0**	**2.0**	**2.1**	**2.1**

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: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Major Currency Index are from FRSR H.10. 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 Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2021 through 2025 and averages for the five-year periods 2021-2025 and 2026-2030. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

		Average For The Year					Five-Year Averages	
		2021	2022	2023	2024	2025	2021-2025	2026-2030
1. Federal Funds Rate	**CONSENSUS**	**1.5**	**1.9**	**2.1**	**2.3**	**2.4**	**2.1**	**2.4**
	Top 10 Average	2.1	2.6	2.7	2.9	3.0	2.6	3.0
	Bottom 10 Average	1.0	1.2	1.5	1.8	1.9	1.5	1.9
2. Prime Rate	**CONSENSUS**	**4.5**	**4.9**	**5.1**	**5.4**	**5.5**	**5.1**	**5.5**
	Top 10 Average	5.0	5.5	5.7	6.0	6.0	5.6	6.0
	Bottom 10 Average	4.0	4.3	4.6	4.9	5.0	4.5	5.0
3. LIBOR, 3-Mo.	**CONSENSUS**	**1.9**	**2.2**	**2.4**	**2.6**	**2.7**	**2.3**	**2.7**
	Top 10 Average	2.4	2.7	2.9	3.1	3.2	2.9	3.2
	Bottom 10 Average	1.4	1.6	1.8	2.0	2.2	1.8	2.2
4. Commercial Paper, 1-Mo.	**CONSENSUS**	**1.7**	**2.1**	**2.3**	**2.5**	**2.7**	**2.3**	**2.7**
	Top 10 Average	2.2	2.5	2.8	3.0	3.1	2.7	3.1
	Bottom 10 Average	1.3	1.6	1.8	2.1	2.2	1.8	2.2
5. Treasury Bill Yield, 3-Mo.	**CONSENSUS**	**1.5**	**1.8**	**2.0**	**2.3**	**2.4**	**2.0**	**2.4**
	Top 10 Average	2.1	2.6	2.7	2.9	3.0	2.6	**3.0**
	Bottom 10 Average	1.0	1.2	1.4	1.7	1.8	1.4	**1.8**
6. Treasury Bill Yield, 6-Mo.	**CONSENSUS**	**1.6**	**1.9**	**2.2**	**2.4**	**2.5**	**2.1**	**2.5**
	Top 10 Average	2.2	2.6	2.8	3.0	3.1	2.7	**3.1**
	Bottom 10 Average	1.1	1.3	1.5	1.8	2.0	1.5	**2.0**
7. Treasury Bill Yield, 1-Yr.	**CONSENSUS**	**1.7**	**2.0**	**2.2**	**2.5**	**2.6**	**2.2**	**2.7**
	Top 10 Average	2.3	2.7	2.9	3.2	3.2	2.8	**3.2**
	Bottom 10 Average	1.2	1.3	1.6	1.9	2.1	1.6	**2.1**
8. Treasury Note Yield, 2-Yr.	**CONSENSUS**	**1.8**	**2.1**	**2.4**	**2.6**	**2.7**	**2.3**	**2.8**
	Top 10 Average	2.4	2.8	3.1	3.3	3.4	3.0	**3.4**
	Bottom 10 Average	1.2	1.5	1.7	2.0	2.2	1.7	**2.2**
10. Treasury Note Yield, 5-Yr.	**CONSENSUS**	**2.0**	**2.3**	**2.6**	**2.8**	**2.9**	**2.5**	**3.0**
	Top 10 Average	2.6	3.0	3.2	3.5	3.5	3.2	**3.6**
	Bottom 10 Average	1.5	1.7	1.9	2.1	2.3	1.9	**2.3**
11. Treasury Note Yield, 10-Yr.	**CONSENSUS**	**2.3**	**2.5**	**2.8**	**3.0**	**3.1**	**2.8**	**3.2**
	Top 10 Average	2.9	3.3	3.6	3.8	3.9	3.5	**4.0**
	Bottom 10 Average	1.8	1.9	2.1	2.3	2.4	2.1	**2.5**
12. Treasury Bond Yield, 30-Yr.	**CONSENSUS**	**2.8**	**3.0**	**3.2**	**3.5**	**3.6**	**3.2**	**3.7**
	Top 10 Average	3.3	3.6	4.0	4.2	4.3	3.9	**4.4**
	Bottom 10 Average	2.2	2.4	2.5	2.7	2.9	2.6	**2.9**
13. Corporate Aaa Bond Yield	**CONSENSUS**	**3.7**	**4.0**	**4.3**	**4.5**	**4.6**	**4.2**	**4.7**
	Top 10 Average	4.3	4.6	4.9	5.2	5.3	4.9	**5.4**
	Bottom 10 Average	3.2	3.4	3.6	3.7	3.9	3.6	**4.0**
13. Corporate Baa Bond Yield	**CONSENSUS**	**4.7**	**4.9**	**5.2**	**5.4**	**5.6**	**5.2**	**5.6**
	Top 10 Average	5.3	5.6	5.9	6.2	6.3	5.9	**6.4**
	Bottom 10 Average	4.2	4.3	4.4	4.6	4.8	4.5	**4.8**
14. State & Local Bonds Yield	**CONSENSUS**	**3.6**	**3.7**	**3.9**	**4.1**	**4.2**	**3.9**	**4.2**
	Top 10 Average	4.0	4.3	4.5	4.6	4.7	4.4	**4.7**
	Bottom 10 Average	3.2	3.2	3.3	3.5	3.7	3.4	**3.8**
15. Home Mortgage Rate	**CONSENSUS**	**4.1**	**4.2**	**4.5**	**4.7**	**4.8**	**4.5**	**4.9**
	Top 10 Average	4.5	4.8	5.1	5.4	5.4	5.0	**5.5**
	Bottom 10 Average	3.7	3.7	3.9	4.1	4.2	3.9	**4.2**
A. Fed's AFE Nominal $ Index	**CONSENSUS**	**108.8**	**108.8**	**109.1**	**109.2**	**108.8**	**108.9**	**108.3**
	Top 10 Average	110.6	110.7	111.1	111.5	111.6	111.1	111.8
	Bottom 10 Average	107.0	107.0	107.1	107.1	106.5	106.9	105.7
		Year-Over-Year, % Change					Five-Year Averages	
		2021	2022	2023	2024	2025	2021-2025	2026-2030
B. Real GDP	**CONSENSUS**	**1.9**	**2.0**	**2.0**	**1.9**	**2.0**	**1.9**	**2.0**
	Top 10 Average	2.4	2.4	2.3	2.2	2.2	2.3	2.3
	Bottom 10 Average	1.4	1.6	1.6	1.7	1.7	1.6	1.7
C. GDP Chained Price Index	**CONSENSUS**	**2.2**	**2.3**	**2.3**	**2.2**	**2.2**	**2.2**	**2.2**
	Top 10 Average	2.6	2.8	2.7	2.6	2.6	2.7	2.6
	Bottom 10 Average	1.8	1.8	1.9	1.9	1.9	1.9	1.9
D. Consumer Price Index	**CONSENSUS**	**2.1**	**2.2**	**2.2**	**2.2**	**2.1**	**2.2**	**2.1**
	Top 10 Average	2.4	2.4	2.5	2.4	2.3	2.4	2.3
	Bottom 10 Average	1.8	1.9	2.0	2.0	1.9	1.9	2.0

EPCOR Water Arizona Inc.
Derivation of Mean Equity Risk Premium Based Studies
Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

Line No.		Implied Equity Risk Premium
	Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):	
1.	Historical Equity Risk Premium	4.21 %
2.	Regression of Historical Equity Risk Premium (2)	6.44
3.	Forecasted Equity Risk Premium Based on PRPM (3)	3.90
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	6.03
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	4.78
6.	Average Equity Risk Premium (6)	5.07 %

Notes:
(1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2019. 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.

(2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A rated public utility bond yields from 1928 - 2019 referenced in note 1 above.

(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 - January 2020.

(4) Using data from Value Line for the S&P Utilities Index, an expected return of 10.05% 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 4.02%, calculated on line 3 of page 3 of this Exhibit results in an equity risk premium of 6.03%. (10.05 - 4.02% = 6.03%)

(5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 8.80% 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 4.02%, calculated on line 3 of page 3 of this Exhibit results in an equity risk premium of 4.78%. (8.80% - 4.02% = 4.78%)

(6) Average of lines 1 through 5.

EXHIBIT DWD-5

EPCOR Water Arizona Inc.
Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

Proxy Group of Seven Water Companies	[1] Value Line Adjusted Beta	[2] Bloomberg Adjusted Beta	[3] Average Beta	[4] Market Risk Premium (1)	[5] Risk-Free Rate (2)	[6] Traditional CAPM Cost Rate	[7] ECAPM Cost Rate	[8] Indicated Common Equity Cost Rate (3)
American States Water Co.	0.65	0.50	0.57	9.41 %	2.68 %	8.04 %	9.05 %	8.55 %
American Water Works Company Inc	0.55	0.56	0.56	9.41	2.68	7.95	8.98	8.47
Aqua America	0.65	0.60	0.63	9.41	2.68	8.61	9.48	9.04
California Water Service Group	0.70	0.60	0.65	9.41	2.68	8.79	9.62	9.21
Middlesex Water Co.	0.75	0.76	0.75	9.41	2.68	9.74	10.32	10.03
SJW Group	0.60	0.54	0.57	9.41	2.68	8.04	9.05	8.55
York Water Co.	0.70	0.68	0.69	9.41	2.68	9.17	9.90	9.54
Mean			0.63			8.62 %	9.49 %	9.06 %
Median			0.63			8.61 %	9.48 %	9.04 %
Average of Mean and Median			0.63			8.62	9.49	9.05 %

Notes on page 2 of this Exhibit.

EPCOR Water Arizona Inc.
Notes to Accompany the Application of the CAPM and ECAPM

Notes:

(1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

Historical Data MRP Estimates:

Measure 1: Ibbotson Arithmetic Mean MRP (1926-2019)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2019:	11.89 %
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.12
MRP based on Ibbotson Historical Data:	6.77 %

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data
(1926-2018) 9.65 %

Measure 3: Application of the PRPM to Ibbotson Historical Data:
(January 1926 - January 2020) 8.13 %

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending January 31, 2020)

Total projected return on the market 3-5 years hence*:	11.69 %
Projected Risk-Free Rate (see note 2):	2.68
MRP based on Value Line Summary & Index:	9.01 %

*Forcasted 3-5 year capital appreciation plus expected dividend yield

Measure 5: Value Line Projected Return on the Market based on the S&P 500

Total return on the Market based on the S&P 500:	14.51 %
Projected Risk-Free Rate (see note 2):	2.68
MRP based on Value Line data	11.83 %

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	13.73 %
Projected Risk-Free Rate (see note 2):	2.68
MRP based on Bloomberg data	11.05 %

Average of Value Line, Ibbotson, and Bloomberg MRP: 9.41 %

(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 10-11 of Exhibit DWD-4.) The projection of the risk-free rate is illustrated below:

First Quarter 2020	2.30 %
Second Quarter 2020	2.30
Third Quarter 2020	2.40
Fourth Quarter 2020	2.40
First Quarter 2021	2.50
Second Quarter 2021	2.60
2021-2025	3.20
2026-2030	3.70
	2.68 %

(3) Average of Column 6 and Column 7.

Sources of Information:
Value Line Summary and Index
Blue Chip Financial Forecasts, February 1, 2020 and December 1, 2019
Stocks, Bonds, Bills, and Inflation - 2019 SBBI Yearbook, John Wiley & Sons, Inc.
Bloomberg Professional Services

EXHIBIT DWD-6

EPCOR Water Arizona Inc.
Basis of Selection of the Group of Non-Price Regulated Companies
Comparable in Total Risk to the Utility Proxy Group

The criteria for selection of the Non-Price Regulated Proxy Group was that the non-price regulated companies be domestic and reported in Value Line Investment Survey (Standard Edition).

The Non-Price Regulated Proxy Group companies were then selected based on the unadjusted beta range of 0.27 – 0.69 and residual standard error of the regression range of 2.5707 – 30659 of the Utility Proxy Group.

These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression. Plus or minus two standard deviations captures 95.50% of the distribution of unadjusted betas and residual standard errors of the regression.

The standard deviation of the Gas Utility Proxy Group's residual standard error of the regression is 0.1238. The standard deviation of the standard error of the regression is calculated as follows:

$$\text{Standard Deviation of the Std. Err. of the Regr.} = \frac{\text{Standard Error of the Regression}}{\sqrt{2N}}$$

where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1238 = \frac{2.8183}{\sqrt{518}} = \frac{2.8183}{22.7596}$$

Source of Information: Value Line, Inc., December 2019
Value Line Investment Survey (Standard Edition)

EPCOR Water Arizona Inc.
Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

Proxy Group of Seven Water Companies	[1] Value Line Adjusted Beta	[2] Unadjusted Beta	[3] Residual Standard Error of the Regression	[4] Standard Deviation of Beta
American States Water Co.	0.70	0.52	2.7606	0.1051
American Water Works Company Inc	0.55	0.31	2.0671	0.0787
Aqua America	0.70	0.48	2.2102	0.0841
California Water Service Group	0.70	0.54	2.8259	0.1076
Middlesex Water Co.	0.75	0.55	3.2001	0.1218
SJW Group	0.60	0.37	3.2738	0.1246
York Water Co.	0.75	0.56	3.3903	0.1291
Average	0.68	0.48	2.8183	0.1073
Beta Range (+/- 2 std. Devs. of Beta)	0.27	0.69		
2 std. Devs. of Beta	0.21			
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.5707	3.0659		
Std. dev. of the Res. Std. Err.	0.1238			
2 std. devs. of the Res. Std. Err.	0.2476			

Source of Information: Valueline Proprietary Database, December 2019

EPCOR Water Arizona Inc.
Proxy Group of Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Seven Water Companies

Proxy Group of Seventeen Non-Price Regulated Companies	[1] VL Adjusted Beta	[2] Unadjusted Beta	[3] Residual Standard Error of the Regression	[4] Standard Deviation of Beta
AutoZone Inc.	0.80	0.68	2.8167	0.1072
Cheesecake Factory	0.70	0.54	2.8539	0.1087
Cboe Global Markets	0.70	0.52	2.8145	0.1072
Cracker Barrel	0.75	0.59	3.0393	0.1157
C.H. Robinson	0.80	0.69	2.6005	0.0990
Campbell Soup	0.65	0.42	2.6472	0.1008
Dollar General	0.80	0.67	3.0401	0.1157
Dunkin' Brands Group	0.60	0.38	2.7913	0.1063
Darden Restaurants	0.80	0.64	2.9354	0.1118
Forrester Research	0.75	0.57	2.6369	0.1004
Hormel Foods	0.65	0.47	2.6420	0.1006
Integra LifeSciences	0.80	0.64	3.0015	0.1143
Lamb Weston Holdings	0.75	0.57	2.7437	0.1768
Vail Resorts	0.80	0.65	2.6758	0.1019
Philip Morris Int'l	0.80	0.62	2.5997	0.0990
Texas Roadhouse	0.80	0.69	3.0305	0.1154
Viad Corp.	0.80	0.64	3.0650	0.1167
Average	0.75	0.59	2.8200	0.1100
Proxy Group of Seven Water Companies	0.68	0.48	2.8183	0.1073

Source of Information: Valueline Proprietary Database, December 2019

EXHIBIT DWD-7

EPCOR Water Arizona Inc.
Summary of Cost of Equity Models Applied to
Proxy Group of Seventeen Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Seven Water Companies

Principal Methods		Proxy Group of Seventeen Non-Price Regulated Companies	
Discounted Cash Flow Model (DCF) (1)		11.65	%
Risk Premium Model (RPM) (2)		10.90	
Capital Asset Pricing Model (CAPM) (3)		10.23	
	Mean	10.93	%
	Median	10.90	%
	Average of Mean and Median	10.92	%

Notes:
(1) From page 2 of this Exhibit.
(2) From page 3 of this Exhibit.
(3) From page 6 of this Exhibit.

EPCOR Water Arizona Inc.
DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Seven Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Seventeen Non-Price Regulated Companies	Average Dividend Yield	Value Line Projected Five Year Growth in EPS	Zack's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Bloomberg Projected Five Year Growth in EPS	Average Projected Five Year Growth Rate in EPS	Adjusted Dividend Yield	Indicated Common Equity Cost Rate (1)
AutoZone Inc.	- %	13.50 %	11.20 %	10.95 %	10.80 %	11.61 %	- %	NA %
Cheesecake Factory	3.52	9.00	11.00	8.13	11.00	9.78	3.69	13.47
Cboe Global Markets	1.21	14.50	5.90	1.92	5.91	7.06	1.25	8.31
Cracker Barrel	3.31	11.00	1.10	(0.40)	5.57	5.89	3.41	9.30
C.H. Robinson	2.64	9.00	9.00	6.80	6.90	7.93	2.74	10.67
Campbell Soup	2.92	2.00	6.00	NA	7.07	5.02	2.99	8.01
Dollar General	0.82	12.00	11.40	10.83	11.03	11.32	0.87	12.19
Dunkin' Brands Group	1.97	10.00	10.90	7.86	9.47	9.56	2.06	11.62
Darden Restaurants	3.08	11.00	9.20	8.31	8.10	9.15	3.22	12.37
Forrester Research	-	9.00	12.00	12.00	16.00	12.25	-	NA
Hormel Foods	2.08	10.50	6.10	3.20	4.62	6.11	2.14	8.25
Integra LifeSciences	-	12.00	12.40	13.19	12.21	12.45	-	NA
Lamb Weston Holdings	1.07	11.00	8.80	8.30	8.97	9.27	1.12	10.39
Vail Resorts	2.90	18.00	15.00	9.20	7.00	12.30	3.08	15.38
Philip Morris Int'l	5.51	6.00	7.60	6.06	7.36	6.76	5.70	12.46
Texas Roadhouse	2.08	14.50	11.30	9.11	11.50	11.60	2.20	13.80
Viad Corp.	0.61	11.00	NA	14.00	NA	12.50	0.65	13.15
							Mean	11.38 %
							Median	11.91 %
							Average of Mean and Median	11.65 %

NA= Not Available
NMF= Not Meaningful Figure

(1) The application of the DCF model to the domestic, non-price regluated comparable risk companies is identical to the application of the DCF to the utility proxy group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of January 31, 2020. The dividend yield is then adjusted by 1/2 the average projected growth rate in EPS, which is calculated by averaging the 5 year projected growth in EPS provided by Value Line, www.reuters.com, www.zacks.com, and www.yahoo.com (excluding any negative growth rates) and then adding that growth rate to the adjusted dividend yield.

Source of Information:
Value Line Investment Survey
www.reuters.com Downloaded on 01/31/2020
www.zacks.com Downloaded on 01/31/2020
www.yahoo.com Downloaded on 01/31/2020
Bloomberg Professional Services

EPCOR Water Arizona Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Seventeen Non-Price Regulated Companies
1.	Prospective Yield on Baa Rated Corporate Bonds (1)	4.54 %
2.	Adjustment to Reflect Proxy Group Bond Rating (2)	(0.18)
3.	Prospective Bond Rating	4.36 %
4.	Equity Risk Premium (3)	6.54
5.	Risk Premium Derived Common Equity Cost Rate	10.90 %

Notes: (1) Average forecast of Baa corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated February 1, 2020 and December 1, 2019 (see pages 10 and 11 of Exhibit DWD-4). The estimates are detailed below.

First Quarter 2020	4.00 %
Second Quarter 2020	4.10
Third Quarter 2020	4.20
Fourth Quarter 2020	4.30
First Quarter 2021	4.40
Second Quarter 2021	4.50
2021-2025	5.20
2026-2030	5.60
Average	4.54 %

(2) To reflect the Baa1 average rating of the non-utility proxy group, the prosepctive yield on Baa corporate bonds must be adjusted downward by 1/3 of the spread between A and Baa corporate bond yields as shown below:

	A Corp. Bond Yield	Baa Corp. Bond Yield	Spread
Jan-2020	3.11 %	3.64 %	0.53 %
Dec-2019	3.36	3.88	0.52
Nov-2019	3.40	3.94	0.54
	Average yield spread		0.53 %
	1/3 of spread		0.18 %

(3) From page 5 of this Exhibit.

EPCOR Water Arizona Inc.
Comparison of Long-Term Issuer Ratings for the
Proxy Group of Seventeen Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Seven Water Companies

	Moody's Long-Term Issuer Rating January 2020		Standard & Poor's Long-Term Issuer Rating January 2020	
Proxy Group of Seventeen Non-Price Regulated Companies	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting (1)
AutoZone Inc.	Baa1	8.0	BBB	9.0
Cheesecake Factory	NA	--	NA	--
Cboe Global Markets	A3	7.0	A-	7.0
Cracker Barrel	WR	--	NR	--
C.H. Robinson	Baa2	9.0	BBB+	8.0
Campbell Soup	Baa2	9.0	BBB-	10.0
Dollar General	Baa2	9.0	BBB	9.0
Dunkin' Brands Group	NA	--	NA	--
Darden Restaurants	Baa2	9.0	BBB	9.0
Forrester Research	NA	--	NA	--
Hormel Foods	A1	5.0	A	6.0
Integra LifeSciences	NA	--	NA	--
Lamb Weston Holdings	Ba2	12.0	BB+	11.0
Vail Resorts	NA	--	NR	--
Philip Morris Int'l	A2	6.0	A	6.0
Texas Roadhouse	NA	--	NA	--
Viad Corp.	WR	--	NR	--
Average	Baa1	8.2	BBB+	8.3

Notes:
(1) From page 6 of Exhibit DWD-4.

Source of Information:
Bloomberg Professional Services

EPCOR Water Arizona Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
Proxy Group of Seventeen Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Seven Water Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Seventeen Non-Price Regulated Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.54 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.63
3.	Ibbotson Equity Risk Premium based on PRPM (3)	7.22
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	8.03
5	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	10.85
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	10.07
7.	Conclusion of Equity Risk Premium	8.39 %
8.	Adjusted Beta (7)	0.78
9.	Forecasted Equity Risk Premium	6.54 %

Notes:
(1) From note 1 of page 9 of Exhibit DWD-4.
(2) From note 2 of page 9 of Exhibit DWD-4.
(3) From note 3 of page 9 of Exhibit DWD-4.
(4) From note 4 of page 9 of Exhibit DWD-4.
(5) From note 5 of page 9 of Exhibit DWD-4.
(6) From note 6 of page 9 of Exhibit DWD-4.
(7) Average of mean and median beta from page 6 of this Exhibit.

Sources of Information:
Stocks, Bonds, Bills, and Inflation - 2019 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, February 1, 2020 and December 1, 2019
Bloomberg Professional Services

EPCOR Water Arizona Inc.
Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Seven Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Seventeen Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
AutoZone Inc.	0.80	0.61	0.71	9.41 %	2.68 %	9.36 %	10.04 %	9.70 %
Cheesecake Factory	0.80	0.75	0.78	9.41	2.68	10.02	10.54	10.28
Cboe Global Markets	0.65	0.71	0.68	9.41	2.68	9.08	9.83	9.45
Cracker Barrel	0.75	0.69	0.72	9.41	2.68	9.45	10.11	9.78
C.H. Robinson	0.90	0.84	0.87	9.41	2.68	10.86	11.17	11.02
Campbell Soup	0.65	0.63	0.64	9.41	2.68	8.70	9.55	9.12
Dollar General	0.80	0.73	0.76	9.41	2.68	9.83	10.39	10.11
Dunkin' Brands Group	0.70	0.78	0.74	9.41	2.68	9.64	10.25	9.95
Darden Restaurants	0.80	0.74	0.77	9.41	2.68	9.92	10.46	10.19
Forrester Research	0.85	1.22	1.03	9.41	2.68	12.37	12.30	12.33
Hormel Foods	0.65	0.59	0.62	9.41	2.68	8.51	9.41	8.96
Integra LifeSciences	0.85	0.89	0.87	9.41	2.68	10.86	11.17	11.02
Lamb Weston Holdings	0.65	0.52	0.58	9.41	2.68	8.14	9.12	8.63
Vail Resorts	0.90	1.04	0.97	9.41	2.68	11.81	11.88	11.84
Philip Morris Int'l	0.85	0.90	0.87	9.41	2.68	10.86	11.17	11.02
Texas Roadhouse	0.80	0.83	0.81	9.41	2.68	10.30	10.75	10.52
Viad Corp.	0.80	0.82	0.81	9.41	2.68	10.30	10.75	10.52
Mean			0.78			10.00 %	10.52 %	10.26 %
Median			0.77			9.92 %	10.46 %	10.19 %
Average of Mean and Median			0.78			9.96 %	10.49 %	10.23 %

Notes:
(1) From Exhibit DWD-5, note 1.
(2) From Exhibit DWD-5, note 2.
(3) Average of CAPM and ECAPM cost rates.

EXHIBIT DWD-8

EPCOR Water Arizona Inc.
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		[1] Market Capitalization on January 31, 2020 (1) (millions)		[2] Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	[3] Applicable Size Premium (3)	[4] Spread from Applicable Size Premium (4)
1.	EPCOR Water Arizona Inc.	$ 991.257		8	1.80%	
2.	Proxy Group of Seven Water Companies	$ 6,201.103	6.3 x	4	0.85%	0.95%

	[A] Decile	[B] Market Capitalization of Smallest Company (millions)	[C] Market Capitalization of Largest Company (millions)	[D] Size Premium (Return in Excess of CAPM)*
Largest	1	$ 29,428.909	$ 1,073,390.566	-0.30%
	2	13,512.960	29,022.867	0.52%
	3	7,275.967	13,455.802	0.81%
	4	4,504.066	7,524.230	0.85%
	5	2,996.003	4,503.549	1.28%
	6	1,961.831	2,992.251	1.50%
	7	1,292.791	1,960.201	1.58%
	8	730.047	1,292.224	1.80%
	9	325.360	727.843	2.46%
Smallest	10	2.455	321.578	5.22%

*From 2019 Duff & Phelps Cost of Capital Navigator

Notes:

(1) From page 2 of this Exhibit.

(2) Gleaned from Columns [B] and [C] on the bottom of this page. The appropriate decile (Column [A]) corresponds to the market capitalization of the proxy group, which is found in Column [1].

(3) Corresponding risk premium to the decile is provided in Column [D] on the bottom of this page.

(4) Line No. 1 Column [3] – Line No. 2 Column [3]. For example, the 0.95% in Column [4], Line No. 2 is derived as follows 0.95% = 2.46% - 0.85%.

EPCOR Water Arizona Inc.
Market Capitalization of EPCOR Water Arizona Inc. and the
Proxy Group of Seven Water Companies

Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2018 (millions)	[2] Book Value per Share at Fiscal Year End 2018 (1)	[3] Total Common Equity at Fiscal Year End 2018 (millions)	[4] Closing Stock Market Price on January 31, 2020	[5] Market-to-Book Ratio on January 31, 2020 (2)	[6] Market Capitalization on January 31, 2020 (3) (millions)
EPCOR Water Arizona Inc.		NA	NA	$ 234.45 (4)	NA		
Based upon Proxy Group of Seven Water Companies						422.8 (5)	$ 991.257 (6)
Proxy Group of Seven Water Companies							
American States Water Co.	NYSE	36.758	$ 15.187	$ 558.223	$ 88.560	583.1 %	$ 3,255.274
American Water Works Company Inc	NYSE	180.684	32.454	5,864.000	136.200	419.7	$ 24,609.161
Aqua America	NYSE	178.092	11.283	2,009.364	51.940	460.3	$ 9,250.079
California Water Service Group	NYSE	48.065	15.191	730.157	52.560	346.0	$ 2,526.281
Middlesex Water Co.	NASDAQ	16.403	15.167	248.787	65.260	430.3	$ 1,070.460
SJW Group	NYSE	28.404	31.309	889.312	73.350	234.3	$ 2,083.457
York Water Co.	NASDAQ	12.944	9.750	126.195	47.360	485.7	$ 613.006
Average		71.621	$ 18.620	$ 1,489.434	$ 73.604	422.8 %	$ 6,201.103

NA= Not Available

Notes: (1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 1 * Column 4.
(4) Book common equity from EWAZ's 2018 Annual Report filed with the ACC.
(5) The market-to-book ratio of EPCOR Water Arizona Inc. on January 31, 2020 is assumed to be equal to the market-to-book ratio of Proxy Group of Seven Water Companies on January 31, 2020 as appropriate.
(6) Column [3] multiplied by Column [5].

Source of Information: 2018 Annual Forms 10K
yahoo.finance.com

EXHIBIT DWD-9

EPCOR Water Arizona Inc.
Calculation of Fair Value Increment Rate of Return ("FVROR")

Line No.			
	Inflation		
1.	Historical Inflation | 1990 -2018		2.41% (1)
	Projected Consumer Price Index		
	2019	2.57% (2)	
	2029	3.24% (2)	
2.	Compound Annual Growth Rate		2.37%
	Projected Consumer Price Index		
	2021 - 2025	2.20% (3)	
	2026 - 2030	2.10% (3)	
3.	Mean		2.15%
4.	Mean Projected Inflation Forecast		2.26% (4)
5.	Mean Inflation Rate		2.34% (5)
	Risk-Free Rate		
6.	Historical 30-Year Treasury Bond Yield | 1990 - 2018		5.03% (1)
	Projected Nominal 30-Year U.S. Treasury Bond Yield		
	2021 - 2025	3.20% (3)	
	2026 - 2030	3.70% (3)	
7.			3.45%
8.	Mean 30-Year Treasury Note Yield		4.24% (6)
9.	Mean Real Risk-Free Rate		1.86% (7)
10.	50.0% of Real Risk-Free Rate		0.93%

Notes:
(1) 2019 SBBI Yearbook - Stocks, Bonds, Bills, and Inflation - U.S. Capital Markets Performance by Asset Class 1926 - 2018, Duff & Phelps (Wiley 2019) Chicago, IL. Appendix A-15 Inflation & Appendix A-7 Long-Term Government Bonds: Income Returns
(2) From Table 20. Macroeconomic Indicators. (2020) http://www.eia.gov/forecasts/aeo/.
(3) From page 11 of Exhibit DWD-4.
(4) Average of Line No. 2 and Line No. 3.
(5) Average of Line No. 1 and Line No. 4.
(6) Average of Line No. 6 and Line No. 7.
(7) 1.86% = ((1 + 4.24%)/(1 + 2.34%)-1.

Appendix A

scottmadden
MANAGEMENT CONSULTANTS

Resume & Testimony Listing of:
Dylan W. D'Ascendis, CRRA, CVA
Director

Summary

Dylan is an experienced consultant and a Certified Rate of Return Analyst (CRRA) and Certified Valuation Analyst (CVA). He has served as a consultant for investor-owned and municipal utilities and authorities for 11 years. Dylan has extensive experience in rate of return analyses, class cost of service, rate design, and valuation for regulated public utilities. He has testified as an expert witness in the subjects of rate of return, cost of service, rate design, and valuation before 19 regulatory commissions in the U.S. and an American Arbitration Association panel.

He also maintains the benchmark index against which the Hennessy Gas Utility Mutual Fund performance is measured.

Areas of Specialization

- Regulation and Rates
- Utilities
- Mutual Fund Benchmarking
- Capital Market Risk
- Financial Modeling
- Valuation
- Regulatory Strategy
- Rate Case Support
- Rate of Return
- Cost of Service
- Rate Design

Recent Expert Testimony Submission/Appearances

Jurisdiction	***Topic***
Massachusetts Department of Public Utilities	Rate of Return
New Jersey Board of Public Utilities	Rate of Return
Hawaii Public Utilities Commission	Cost of Service, Rate Design
South Carolina Public Service Commission	Return on Common Equity
American Arbitration Association	Valuation

Recent Assignments

- Provided expert testimony on the cost of capital for ratemaking purposes before numerous state utility regulatory agencies
- Maintains the benchmark index against which the Hennessy Gas Utility Mutual Fund performance is measured
- Sponsored valuation testimony for a large municipal water company in front of an American Arbitration Association Board to justify the reasonability of their lease payments to the City
- Co-authored a valuation report on behalf of a large investor-owned utility company in response to a new state regulation which allowed the appraised value of acquired assets into rate base

Recent Publications and Speeches

- Co-Author of: "Decoupling, Risk Impacts and the Cost of Capital", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University and Pauline M. Ahern. The Electricity Journal, March, 2020.
- Co-Author of: "Decoupling Impact and Public Utility Conservation Investment", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University and Pauline M. Ahern. Energy Policy Journal, 130 (2019), 311-319.
- "Establishing Alternative Proxy Groups", before the Society of Utility and Regulatory Financial Analysts: 51st Financial Forum, April 4, 2019, New Orleans, LA.
- "Past is Prologue: Future Test Year", Presentation before the National Association of Water Companies 2017 Southeast Water Infrastructure Summit, May 2, 2017, Savannah, GA.
- Co-author of: "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, Pauline M. Ahern, and Frank J. Hanley, The Electricity Journal, May, 2013.
- "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.

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MANAGEMENT CONSULTANTS

Testimony Listing of:
Dylan W. D'Ascendis, CRRA, CVA
Director

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Regulatory Commission of Alaska				
Alaska Power Company	07/16	Alaska Power Company	Docket No. TA857-2	Rate of Return
Arizona Corporation Commission				
Arizona Water Company	12/19	Arizona Water Company – Western Group	Docket No. W01445A-19-0278	Rate of Return
Arizona Water Company	08/18	Arizona Water Company – Northern Group	Docket No. W01445A-18-0164	Rate of Return
Colorado Public Utilities Commission				
Summit Utilities, Inc.	04/18	Colorado Natural Gas Company	Docket No. 18AL-0305G	Return on Equity
Atmos Energy Corporation	06/17	Atmos Energy Corporation	Docket No. 17AL-0429G	Return on Equity
Delaware Public Service Commission				
Tidewater Utilities, Inc.	11/13	Tidewater Utilities, Inc.	Docket No. 13-466	Capital Structure
Hawaii Public Utilities Commission				
Lanai Water Company, Inc.	12/19	Lanai Water Company, Inc.	Docket No. 2019-0386	Cost of Service / Rate Design
Manele Water Resources, LLC	8/19	Manele Water Resources, LLC	Docket No. 2019-0311	Cost of Service / Rate Design
Kaupulehu Water Company	02/18	Kaupulehu Water Company	Docket No. 2016-0363	Rate of Return
Aqua Engineers, LLC	05/17	Puhi Sewer & Water Company	Docket No. 2017-0118	Cost of Service / Rate Design
Hawaii Resources, Inc.	09/16	Laie Water Company	Docket No. 2016-0229	Cost of Service / Rate Design
Illinois Commerce Commission				
Utility Services of Illinois, Inc.	11/17	Utility Services of Illinois, Inc.	Docket No. 17-1106	Cost of Service / Rate Design
Aqua Illinois, Inc.	04/17	Aqua Illinois, Inc.	Docket No. 17-0259	Rate of Return
Utility Services of Illinois, Inc.	04/15	Utility Services of Illinois, Inc.	Docket No. 14-0741	Rate of Return
Indiana Utility Regulatory Commission				
Aqua Indiana, Inc.	03/16	Aqua Indiana, Inc. Aboite Wastewater Division	Docket No. 44752	Rate of Return
Twin Lakes, Utilities, Inc.	08/13	Twin Lakes, Utilities, Inc.	Docket No. 44388	Rate of Return
Kansas Corporation Commission				
Atmos Energy	07/19	Atmos Energy	19-ATMG-525-RTS	Rate of Return
Louisiana Public Service Commission				
Louisiana Water Service, Inc.	06/13	Louisiana Water Service, Inc.	Docket No. U-32848	Rate of Return
Maryland Public Service Commission				
FirstEnergy, Inc.	08/18	Potomac Edison Company	Case No. 9490	Rate of Return
Massachusetts Department of Public Utilities				
Unitil Corporation	12/19	Fitchburg Gas & Electric Co. (Elec.)	D.P.U. 19-130	Rate of Return
Unitil Corporation	12/19	Fitchburg Gas & Electric Co. (Gas)	D.P.U. 19-131	Rate of Return

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MANAGEMENT CONSULTANTS

Testimony Listing of:
Dylan W. D'Ascendis, CRRA, CVA
Director

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Liberty Utilities	07/15	Liberty Utilities d/b/a New England Natural Gas Company	Docket No. 15-75	Rate of Return
Mississippi Public Service Commission				
Atmos Energy	03/19	Atmos Energy	Docket No. 2015-UN-049	Capital Structure
Atmos Energy	07/18	Atmos Energy	Docket No. 2015-UN-049	Capital Structure
Missouri Public Service Commission				
Indian Hills Utility Operating Company, Inc.	10/17	Indian Hills Utility Operating Company, Inc.	Case No. SR-2017-0259	Rate of Return
Raccoon Creek Utility Operating Company, Inc.	09/16	Raccoon Creek Utility Operating Company, Inc.	Docket No. SR-2016-0202	Rate of Return
New Jersey Board of Public Utilities				
Aqua New Jersey, Inc.	12/18	Aqua New Jersey, Inc.	Docket No. WR18121351	Rate of Return
Middlesex Water Company	10/17	Middlesex Water Company	Docket No. WR17101049	Rate of Return
Middlesex Water Company	03/15	Middlesex Water Company	Docket No. WR15030391	Rate of Return
The Atlantic City Sewerage Company	10/14	The Atlantic City Sewerage Company	Docket No. WR14101263	Cost of Service / Rate Design
Middlesex Water Company	11/13	Middlesex Water Company	Docket No. WR1311059	Capital Structure
North Carolina Utilities Commission				
Aqua North Carolina, Inc.	12/19	Aqua North Carolina, Inc.	Docket No. W-218 Sub 526	Rate of Return
Carolina Water Service, Inc.	06/19	Carolina Water Service, Inc.	Docket No. W-354 Sub 364	Rate of Return
Carolina Water Service, Inc.	09/18	Carolina Water Service, Inc.	Docket No. W-354 Sub 360	Rate of Return
Aqua North Carolina, Inc.	07/18	Aqua North Carolina, Inc.	Docket No. W-218 Sub 497	Rate of Return
Public Utilities Commission of Ohio				
Aqua Ohio, Inc.	05/16	Aqua Ohio, Inc.	Docket No. 16-0907-WW-AIR	Rate of Return
Pennsylvania Public Utility Commission				
Valley Energy, Inc.	07/19	C&T Enterprises	Docket No. R-2019-3008209	Rate of Return
Wellsboro Electric Company	07/19	C&T Enterprises	Docket No. R-2019-3008208	Rate of Return
Citizens' Electric Company of Lewisburg	07/19	C&T Enterprises	Docket No. R-2019-3008212	Rate of Return
Steelton Borough Authority	01/19	Steelton Borough Authority	Docket No. A-2019-3006880	Valuation
Mahoning Township, PA	08/18	Mahoning Township, PA	Docket No. A-2018-3003519	Valuation
SUEZ Water Pennsylvania Inc.	04/18	SUEZ Water Pennsylvania Inc.	Docket No. R-2018-000834	Rate of Return
Columbia Water Company	09/17	Columbia Water Company	Docket No. R-2017-2598203	Rate of Return

scottmadden
MANAGEMENT CONSULTANTS

Testimony Listing of:
Dylan W. D'Ascendis, CRRA, CVA
Director

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Veolia Energy Philadelphia, Inc.	06/17	Veolia Energy Philadelphia, Inc.	Docket No. R-2017-2593142	Rate of Return
Emporium Water Company	07/14	Emporium Water Company	Docket No. R-2014-2402324	Rate of Return
Columbia Water Company	07/13	Columbia Water Company	Docket No. R-2013-2360798	Rate of Return
Penn Estates Utilities, Inc.	12/11	Penn Estates, Utilities, Inc.	Docket No. R-2011-2255159	Capital Structure / Long-Term Debt Cost Rate
South Carolina Public Service Commission				
Blue Granite Water Co.	12/19	Blue Granite Water Company	Docket No. 2019-292-WS	Rate of Return
Carolina Water Service, Inc.	02/18	Carolina Water Service, Inc.	Docket No. 2017-292-WS	Rate of Return
Carolina Water Service, Inc.	06/15	Carolina Water Service, Inc.	Docket No. 2015-199-WS	Rate of Return
Carolina Water Service, Inc.	11/13	Carolina Water Service, Inc.	Docket No. 2013-275-WS	Rate of Return
United Utility Companies, Inc.	09/13	United Utility Companies, Inc.	Docket No. 2013-199-WS	Rate of Return
Utility Services of South Carolina, Inc.	09/13	Utility Services of South Carolina, Inc.	Docket No. 2013-201-WS	Rate of Return
Tega Cay Water Services, Inc.	11/12	Tega Cay Water Services, Inc.	Docket No. 2012-177-WS	Capital Structure
Virginia State Corporation Commission				
WGL Holdings, Inc.	7/18	Washington Gas Light Company	PUR-2018-00080	Rate of Return
Atmos Energy Corporation	5/18	Atmos Energy Corporation	PUR-2018-00014	Rate of Return
Aqua Virginia, Inc.	7/17	Aqua Virginia, Inc.	PUR-2017-00082	Rate of Return
Massanutten Public Service Corp.	08/14	Massanutten Public Service Corp.	PUE-2014-00035	Rate of Return / Rate Design

EPCOR Water Arizona Inc.
Docket No. WS-01303A-20-XXXX
Test Year Ended December 31, 2019

EPCOR Direct Testimony

Mr. John F. Guastella

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

ROBERT "BOB" BURNS, Chairman
BOYD DUNN
SANDRA D. KENNEDY
JUSTIN OLSON
LEA MÁRQUEZ PETERSON

IN THE MATTER OF THE APPLICATION OF EPCOR WATER ARIZONA INC. FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND INCREASES/DECREASES IN ITS RATES AND CHARGES BASED THEREON FOR UTILITY SERVICE BY ITS AGUA FRIA, ANTHEM, CHAPARRAL, HAVASU, MOHAVE, NORTH MOHAVE, PARADISE VALLEY, SUN CITY, SUN CITY WEST, TUBAC, AND WILLOW VALLEY WATER DISTRICTS AND FOR CONSIDERATION OF CONSOLIDATION PROPOSALS	DOCKET NO: WS-01303A-20-____

DIRECT TESTIMONY
OF
JOHN F. GUASTELLA
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

DIRECT TESTIMONY
OF
JOHN F. GUASTELLA
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

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II. PURPOSE OF TESTIMONY……2
III. DEPRECIATION RATES……..2

EXECUTIVE SUMMARY

John F. Guastella testifies as follows:

In connection with the rate application by EPCOR Water Arizona Inc. ("EWAZ" or "Company") for its Agua Fria, Anthem, Chaparral, Havasu, Mohave, North Mohave, Paradise Valley, Sun City, Sun City West, Tubac and Willow Valley water districts, I am recommending the use of similar average service lives and resultant depreciation rates, by account, for all water systems, as reflected in Exhibit JFG-1. EWAZ now uses various depreciation rates, including some that reflect general guidelines by the Arizona Corporation Commission ("Commission") Staff. On the basis of previous comparative depreciation studies I performed on behalf of the EWAZ in 2017, and another for its predecessor, Arizona American Water Company in 2010, and a review of the environmental impact on certain assets of climate conditions unique to Arizona, I found that the Commission Staff's recommended guideline depreciation rates are appropriate for most accounts, with the exception of power production and pumping, water treatment equipment, meter installations and vaults, and ground storage tanks, and transportation equipment. In accordance with the Company's direction for this assignment, however, I have also adjusted average service lives for certain plant accounts in order to mitigate the impact of the rate increase on its customers for this rate filing.

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND TELEPHONE NUMBER.

A. My name is John F. Guastella. My business address is Guastella Associates, LLC, 725 N. Highway A1A, Suite B103, Jupiter, Florida 33477. My telephone number is (561) 747-9867.

Q. BRIEFLY DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I graduated from Stevens Institute of Technology with a degree in Mechanical Engineering. My professional career began with employment by the New York State Public Service Commission ("NYPSC") where I worked for 16 years. When I left the NYPSC to form my own consulting firm (Guastella Associates, LLC), I was the NYPSC's Director of the Water Division responsible for the regulation of some 450 water utilities, involving all aspects of rates and valuation, and the service provided by the water utilities. While with the NYPSC, I served as Chairman of the Staff Subcommittee of the Water Committee of the National Association of Regulatory Utility Commissioners, ("NARUC"), and I was one of the founders and faculty of the NARUC Water Rate Seminar. I have continued, to date, as a faculty member of this rate seminar and have taught the basics of rate setting and utility regulation to some 8,000 students over the last 46 years. As a consultant, I have been involved in the preparation of rate analyses, valuations, appraisals, depreciation studies, and various studies regarding utility regulatory issues. I have testified as an expert in 26 states with respect to rate setting, valuation, depreciation, appraisals and condemnation cases, before regulatory agencies, courts and at municipal hearings. A detailed statement of my qualifications and experience is attached as Exhibit JFG-A.

Q. BY WHOM ARE YOU CURRENTLY EMPLOYED AND IN WHAT CAPACITY?

A. I am President of Guastella Associates, LLC.

II. PURPOSE OF TESTIMONY

Q. PLEASE DESCRIBE THE PURPOSE OF YOUR TESTIMONY.

A. The purpose of my testimony is to describe my review of the average service lives and depreciation rates applicable to the depreciable assets of EWAZ's water systems, and provide my opinion as to appropriate revisions.

III. DEPRECIATION RATES

Q. PLEASE DESCRIBE THE APPROACH YOU USED REGARDING YOUR ANALYSIS OF AVERAGE SERVICE LIVES AND DEPRECIATION RATES FOR EWAZ'S DEPRECIABLE WATER ASSETS.

A. Consistent with my previous studies of the EWAZ's depreciation rates, as well as those for clients in other jurisdictions, it has been determined that the best available depreciation analysis be performed on the basis of comparative average service lives and depreciation rates. The primary reasons found for this approach are the lack of sufficient retirement data because of the size and age of EWAZ's various districts and their historic development, and the high cost of performing actuarial studies that would likely produce incomplete or uncertain results for systems with limited retirement data. It continues to be my experience that actuarial studies are rarely, if ever, performed for water utilities with these characteristics. Instead, depreciation rates are typically established on the basis of comparative analyses.

Q. IN YOUR PREVIOUS TESTIMONY WITH RESPECT TO THE COMPANY'S WATER DEPRECIATION RATES, YOU DESCRIBED THE GOAL OF

DEPRECIATION. WOULD YOU RESTATE THAT GOAL FOR THE RECORD IN THIS CASE?

A. Yes, the goal of depreciation for rate setting purposes is to allow utilities to recover the original cost of the assets that are used and useful in providing service to their customers, and at a level that spreads the recovery of the costs over the estimated life of the assets so that each generation of customers pays its fair share of the costs according to the use of the assets in providing service to them. The Uniform System of Accounts published by the NARUC defines depreciation as:

> Depreciation, as applied to depreciable utility plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of utility plant in the course of providing service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand, and requirements of public authorities.

Under this definition, depreciation studies are performed in order to estimate the average service lives of various depreciable assets, the major component with which to calculate depreciation rates. Application of depreciation rates to the original cost of assets establishes annual depreciation expense allowances in utility rates for service that will meet the goal of reasonable cost recovery and intergenerational equity. In addition to average service lives, the other component in the calculation of depreciation rates is net salvage values, or salvage value less cost of removal. I would note, however, that it is my understanding that the Commission Staff's recommended guideline depreciation rates take into account net salvage within its estimated average service lives.

Q. **WOULD YOU BRIEFLY EXPLAIN HOW THE RESULTS OF YOUR PREVIOUS DEPRECIATION STUDIES CONTINUE TO BE USEFUL WITH**

RESPECT TO THE WATER SYSTEM ASSETS AND THE DEPRECIATION RATES THAT YOU RECOMMEND IN EXHIBIT JFG-1?

A. The comparable data in my 2010 study were primarily for assets of water utilities, which provided a database of a range of average service lives and depreciation rates. In my last depreciation study in 2017 for the Company's water districts, I took into account the climate in Arizona and the extent to which the Commission Staff's guideline depreciation rates compare to the range of average service lives and resultant depreciation rates from my database. On the basis of discussions with the Company, it was concluded that there are factors with respect to specific assets that were material enough to propose revisions to some of the Commission Staff's guideline depreciation rates.

Q. WITH RESPECT TO YOUR 2017 STUDY, WHAT ARE THE WATER ASSETS FOR WHICH YOU RECOMMENDED ALTERNATIVE DEPRECIATION RATES TO THE COMMISSION STAFF'S GUIDELINE DEPRECIATION RATES?

A. While most of the Commission Staff's guideline depreciation rates were within the range of my database as well as reasonably representative of the Company's existing and anticipated experience, I recommended revisions to the various pumping equipment accounts (all 311 Accounts), water treatment equipment – non-media accounts (Account 320100), ground storage accounts (above and below ground) (330200, 330300, and 330400 Accounts), meter installations (Account 334200), meter vault accounts (Account 334300) and transportation equipment accounts (341100, 341200, 341300, and 341400 Accounts).

Q. WHAT AVERAGE SERVICE LIVES DID YOU RECOMMEND FOR THE PUMPING EQUIPMENT ACCOUNTS IN YOUR 2017 STUDY?

A. I recommended an average service life ("ASL") of 12 years for the pumping equipment accounts, including: A/C 311000 Pumping Equipment Steam, A/C 311200 Pumping Equipment Electric, A/C 311300 Pumping Equipment Diesel, A/C 311400 Pumping Equipment Hydraulic, A/C 311500 Pumping Equipment Other and A/C 311530 Pumping Equipment Water Treatment. The Commission Staff's guideline depreciation rates reflected an ASL of 8 years. As previously noted, I assumed that the Commission Staff's guideline depreciation rates and average service lives take into account its judgment with respect to net salvage.

Q. WHAT AVERAGE SERVICE LIVES DID YOU RECOMMEND FOR THE WATER TREATMENT ACCOUNTS IN YOUR 2017 STUDY?

A. While I agreed that Staff's 30-year ASL was appropriate for treatment structures, A/C 304300 Structures and Improvements Treatment, the ASLs for treatment equipment, non-media and filter media, are significantly less than 30 years. Accordingly, I recommended an ASL of 20 years for water treatment equipment non-media, A/C 320100, and an ASL of 10 years for water treatment filter media, A/C 320200.

Q. WHAT AVERAGE SERVICE LIVES DID YOU RECOMMEND FOR GROUND LEVEL AND BELOW GROUND LEVEL TANKS IN YOUR 2017 STUDY?

A. I found that the Commission Staff's guideline ASL of 20 years for above and below ground tanks was significantly lower than comparable data from my previous 2010 study. On the basis of the Company's experience with these tanks, I recommended an ASL of 50 years for A/C 330200 Ground Level Tanks, A/C 330300 Below Ground Tanks, and A/C 330400 Clearwell.

Q. WHAT AVERAGE SERVICE LIVES DID YOU RECOMMEND FOR METER INSTALLATIONS AND METER VAULTS?

A. In my 2017 study, I found that the Commission Staff used an ASL of 12 years for meters, meter installations and meter vaults. While the ASL of 12 years was appropriate for meters, an ASL of 30 years for A/C 334200 Meter Installations and A/C 334300 Meter Vaults would be more consistent with my database.

Q. WHAT DEPRECIATION RATES DID YOU RECOMMEND FOR TRANSPORTATION EQUIPMENT?

A. I proposed a seven-year useful life or 14.29% annual depreciation rate for NARUC accounts 341100-Transportation Equipment Light Duty Trucks, 341200-Transportation Equipment Heavy Duty Trucks, 341300-Transportation Equipment Autos, and 341400-Transportation Equipment Other. This recommendation is consistent with the Company's replacement plans for all light- and heavy- duty vehicles at 85,000 miles or seven years. Based on discussions with the Company, maintenance costs and safety risks experience significant increases year over year for these vehicles and equipment when retained longer than seven years.

Q. DID YOU HAVE ANY OTHER REVISIONS TO THE COMMISSION STAFF'S GUIDELINE AVERAGE SERVICE LIVES IN YOUR 2017 STUDY?

A. No. For all other accounts, which constitute the majority of accounts, the Commission Staff's guideline average service lives were within the range of ASLs in my database.

Q. HAVE YOU PREPARED A COMPARISON OF THE AVERAGE SERVICE LIVES USED IN YOUR 2010 AND 2017 STUDIES, THE COMMISSION STAFF'S GUIDELINE LIVES AND THOSE YOU ARE USING NOW IN ORDER TO SUPPORT YOUR RECOMMENDED DEPRECIATION RATES AS REFLECTED IN EXHIBIT JFG-1?

A. Yes. Exhibit JFG-2 provides those comparisons.

Q. WOULD YOU PLEASE EXPLAIN HOW YOU USED THE COMPARATIVE DATA TO DETERMINE YOUR RECOMMENDED AVERAGE SERVICE LIVES?

A. Yes. In addition to providing the ASLs resulting from comparative data in order to make judgments for the establishment of reasonable depreciation rates, it provides the basis for reducing certain depreciation rates in order to contribute to the Company's goal of mitigating the magnitude of its proposed rate increase. The recommended ASLs in Exhibit JFG-2 for accounts referenced with footnote number 1 reflect an average of the Commission Staff's guideline lives and those taken from my 2010 depreciation study. Because the Commission Staff's lives are shorter than those in my 2010 study, the average produces longer ASLs and, therefore, lower depreciation rates – and of course when applied to the cost of depreciable utility plant, a lower revenue requirement allowance of depreciation expense. Although additional revisions to these average depreciation rates will likely be warranted in future rate cases, this interim adjustment is appropriate to achieve the Company's goal of mitigating the proposed rate increase in this case.

The accounts referenced with footnote number 2 use an ASL of 40 years in order to be consistent with the average for the structures and improvements A/C 304200, A/C 304300 and A/C 304400.

The accounts referenced with footnote number 3 simply reflect the appropriate ASLs. On the basis of discussions with the Company for this and previous cases, an ASL of 40 years is more appropriate for Infiltration Galleries, A/C 308000. The ASL of 20 years for Water Treatment Equipment Non-Media, AC 320100, as well as the ASL of 10 years for Water Treatment Equipment, A/C 320200, were found to be most appropriate in both my

2010 and 2017 studies. For these accounts, using an average would be an unacceptable departure from a reasonable range.

On the basis of a review with the Company with respect to the ASL of 40 years for the accounts for meter installations and meter vaults, and the ASL of 7 years for the accounts for transportation equipment, those ASLs best reflect current experience and judgment. With respect to all other accounts shown in Exhibit JFG-2 that do not have reference footnotes, the ASLs of the Commission Staff and my 2017 study are the same and are recommended for use in this case.

Q. IN YOUR OPINION, IS THE REDUCTION OF DEPRECIATION RATES AND RESULTANT DEPRECIATION EXPENSE A REASONABLE STEP TOWARDS MITIGATING THE IMPACT OF EWAZ'S PROPOSED RATE INCREASE?

A. Yes. The depreciation expense component of the revenue requirement is a non-cash allowance that provides for the recovery of the original cost of EWAZ's depreciable assets. The ASLs reflected in my studies and the Commission Staff's guidelines are estimates of the expected depreciation of assets with relatively long lives for the most part. Although I am recommending average ASLs for certain accounts, those averages voluntarily mitigating the magnitude of a particular rate increase is an acceptable goal, and using lower depreciation rates for certain accounts that still fall within a range of reasonableness would not have an unreasonable impact on maintaining intergenerational equity with respect to the cost recovery of the assets used to serve existing and future customers. As noted above, additional revisions to these average depreciation rates will likely be warranted in future rate cases, but this interim adjustment is appropriate to achieve the Company's goal of mitigating the proposed rate increase in this case.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

EXHIBIT JFG-1

Recommended Depreciation Rates
Water

Account No.	Description	Average Service Life (Yrs.)	Depreciation Rates
304100	Structures & Improvements Supply	40.0	2.5%
304200	Structures & Improvements Pumping	40.0	2.5%
304300	Structures & Improvements Treatment	40.0	2.5%
304400	Structures & Improvements Trans & Dist	40.0	2.5%
304500	Structures & Improvements General	40.0	2.5%
304600	Structures & Improvements Offices	40.0	2.5%
304620	Structures & Improvements Leasehold	40.0	2.5%
304700	Structures & Improvements Store,Shop,Gge	40.0	2.5%
304800	Structures & Improvements Miscellaneous	40.0	2.5%
305000	Collect & Impounding	50.0	2.0%
306000	Lake, River & Other Intakes	50.0	2.0%
307000	Wells & Springs	35.0	2.9%
308000	Infiltration Galleries	40.0	2.5%
309000	Supply Mains	55.0	1.8%
310000	Power Production Equipment	25.0	4.0%
311000	Pumping Equipment Steam	16.5	6.1%
311200	Pumping Equipment Electric	16.5	6.1%
311300	Pumping Equipment Diesel	16.5	6.1%
311400	Pumping Equipment Hydraulic	16.5	6.1%
311500	Pumping Equipment Other	16.5	6.1%
311530	Pumping Equipment Water Treatment	16.5	6.1%
320100	Water Treatment Equipment Non-Media	20.0	5.0%
320200	Water Treatment Equipment Filter Media	10.0	10.0%
330000	Distribution Reservoirs & Standpipes	55.0	1.8%
330100	Elevated Tank & Standpipes	55.0	1.8%
330200	Ground Level Tanks	42.5	2.4%
330300	Below Ground Tanks	42.5	2.4%
330400	Clearwell	35.0	2.9%
331001	TD Mains Not Classified by Size	50.0	2.0%
331100	TD Mains 4in & Less	50.0	2.0%
331200	TD Mains 6in to 8in	50.0	2.0%
331300	TD Mains 10in to 16in	50.0	2.0%
331400	TD Mains 18in & Grtr	50.0	2.0%
332000	Fire Mains	50.0	2.0%
333000	Services	35.0	2.9%
334100	Meters	12.0	8.3%
334200	Meter Installations	40.0	2.5%
334300	Meter Vaults	40.0	2.5%
335000	Hydrants	50.0	2.0%
336000	Backflow Prevention Devices	15.0	6.7%
339100	Other P/E-Intangible	15.0	6.7%
339200	Other P/E-Supply	15.0	6.7%
339500	Other TD Plant	15.0	6.7%
339600	Other P/E-CPS	22.6	4.4%
340100	Office Furniture & Equipment	18.6	5.4%
340200	Computer & Periphal Equipment	5.0	20.0%
340300	Computer Software	5.0	20.0%
340500	Other Office Equipment	15.0	6.7%
341100	Transportation Equip Light Duty Trucks	7.0	14.3%
341200	Transportation Equip Heavy Duty Trucks	7.0	14.3%
341300	Transportation Equipment Autos	7.0	14.3%
341400	Transportation Equipment Other	7.0	14.3%
342000	Stores Equipment	25.0	4.0%
343000	Tools,Shop,Garage Equipment	22.5	4.4%
344000	Laboratory Equipment	17.5	5.7%
345000	Power Operated Equipment	20.0	5.0%
346100	Communication Equipment Non-Telephone	10.0	10.0%
346190	Remote Control & Instrument	10.0	10.0%
346200	Communication Equipment Telephone	10.0	10.0%
346300	Communication Equipment Other	10.0	10.0%
347000	Miscellaneous Equipment	10.0	10.0%
348000	Other Tangible Plant	10.0	10.0%

EXHIBIT JFG-2

Comparison of Average Service Lives

Water

Account No.	Description	Average Service Lives (Yrs.)			
		2010 Study	2017 Study	Commission Staff	Recommended
304100	Structures & Improvements Supply[2]	40.0	30.0	30.0	40.0
304200	Structures & Improvements Pumping[1]	50.0	30.0	30.0	40.0
304300	Structures & Improvements Treatment[1]	50.0	30.0	30.0	40.0
304400	Structures & Improvements Trans & Dist.	50.0	30.0	30.0	40.0
304500	Structures & Improvements General[2]	40.0	30.0	30.0	40.0
304600	Structures & Improvements Offices[2]	40.0	30.0	30.0	40.0
304620	Structures & Improvements Leasehold[2]	40.0	30.0	30.0	40.0
304700	Structures & Improvements Store,Shop,G	40.0	30.0	30.0	40.0
304800	Structures & Improvements Miscellaneou	40.0	30.0	30.0	40.0
305000	Collect & Impounding[1]	60.0	40.0	40.0	50.0
306000	Lake, River & Other Intakes[1]	60.0	40.0	40.0	50.0
307000	Wells & Springs[1]	40.0	30.0	30.0	35.0
308000	Infiltration Galleries[3]	40.0	15.0	15.0	40.0
309000	Supply Mains[1]	60.0	50.0	50.0	55.0
310000	Power Production Equipment[1]	30.0	20.0	20.0	25.0
311000	Pumping Equipment Steam[1]	25.0	12.0	8.0	16.5
311200	Pumping Equipment Electric[1]	25.0	12.0	8.0	16.5
311300	Pumping Equipment Diesel[1]	25.0	12.0	8.0	16.5
311400	Pumping Equipment Hydraulic[1]	25.0	12.0	8.0	16.5
311500	Pumping Equipment Other[1]	25.0	12.0	8.0	16.5
311530	Pumping Equipment Water Treatment[1]	25.0	12.0	8.0	16.5
320100	Water Treatment Equipment Non-Media[3]	20.0	20.0	30.0	20.0
320200	Water Treatment Equipment Filter Media[3]	10.0	10.0	30.0	10.0
330000	Distribution Reservoirs & Standpipes[1]	65.0	45.0	45.0	55.0
330100	Elevated Tank & Standpipes[1]	65.0	45.0	45.0	55.0
330200	Ground Level Tanks[1]	65.0	50.0	20.0	42.5
330300	Below Ground Tanks[1]	65.0	50.0	20.0	42.5
330400	Clearwell[1]	50.0	50.0	20.0	35.0
331001	TD Mains Not Classified by Size	50.0	50.0	50.0	50.0
331100	TD Mains 4in & Less	70.0	50.0	50.0	50.0
331200	TD Mains 6in to 8in	70.0	50.0	50.0	50.0
331300	TD Mains 10in to 16in	70.0	50.0	50.0	50.0
331400	TD Mains 18in & Grtr	70.0	50.0	50.0	50.0
332000	Fire Mains	70.0	50.0	50.0	50.0
333000	Services[1]	40.0	30.0	30.0	35.0
334100	Meters	15.0	12.0	12.0	12.0
334200	Meter Installations[3]	40.0	30.0	12.0	40.0
334300	Meter Vaults[3]	40.0	30.0	12.0	40.0

Comparison of Average Service Lives

Water

Account No.	Description	Average Service Lives (Yrs.)			
		2010 Study	2017 Study	Commission Staff	Recommended
335000	Hydrants	50.0	50.0	50.0	50.0
336000	Backflow Prevention Devices	15.0	15.0	15.0	15.0
339100	Other P/E-Intangible	15.0	15.0	15.0	15.0
339200	Other P/E-Supply	15.0	15.0	15.0	15.0
339500	Other TD Plant	15.0	15.0	15.0	15.0
339600	Other P/E-CPS[1]	30.2	15.0	15.0	22.6
340100	Office Furniture & Equipment[1]	22.2	15.0	15.0	18.6
340200	Computer & Periphal Equipment	10.0	5.0	5.0	5.0
340300	Computer Software	5.0	5.0	5.0	5.0
340500	Other Office Equipment	15.0	15.0	15.0	15.0
341100	Transportation Equip Light Duty Trucks[3]	5.0	7.0	5.0	7.0
341200	Transportation Equip Heavy Duty Trucks[3]	7.0	7.0	5.0	7.0
341300	Transportation Equipment Autos[3]	6.0	7.0	5.0	7.0
341400	Transportation Equipment Other[3]	6.0	7.0	5.0	7.0
342000	Stores Equipment	25.0	25.0	25.0	25.0
343000	Tools,Shop,Garage Equipment[1]	25.0	20.0	20.0	22.5
344000	Laboratory Equipment[1]	25.0	10.0	10.0	17.5
345000	Power Operated Equipment	20.0	20.0	20.0	20.0
346100	Communication Equipment Non-Telepho	10.0	10.0	10.0	10.0
346190	Remote Control & Instrument	10.0	10.0	10.0	10.0
346200	Communication Equipment Telephone	10.0	10.0	10.0	10.0
346300	Communication Equipment Other	10.0	10.0	10.0	10.0
347000	Miscellaneous Equipment	16.0	10.0	10.0	10.0
348000	Other Tangible Plant	10.0	10.0	20.0	10.0

The recommended ASLs for the noted accounts are calculated according to the following:

[1] Averages the 2010's and Commission Staff's ASLs.

[2] Uses 40 years to be consistent with the other accounts for structures .

[3] Reflects more appropriate ASLs.

EXHIBIT JFG-A

Guastella Associates, LLC

Qualifications & Experience

Rate Setting
Valuation
Management
Consulting

…SERVING REGULATED AND UNREGULATED WATER AND WASTEWATER UTILITIES SINCE 1978

725 N. Highway A1A, Suite B103,
Jupiter, FL 33477
(561) 747-9867
www.guastella.com

INTRODUCTION
GUASTELLA ASSOCIATES, LLC

Guastella Associates, LLC ("formerly John F. Guastella Associates, Inc.") is a consulting firm that specializes in providing utility rate setting, valuation and management services for public and privately-owned water and wastewater utilities.

John F. Guastella established Guastella Associates in 1978. Previously, Mr. Guastella was Director of the Water Division of the New York Public Service Commission. The Water Division provided the New York Commission with technical assistance in regulating the rates and service provided by approximately 450 privately-owned utilities. During the period from 1987 through 1991, Mr. Guastella also managed a 5,500 customer water utility in New York State. In 1989, Guastella Associates acquired the rates and valuation section of Coffin & Richardson, Inc., a general consulting firm that also provided a full range of services to water and wastewater utilities. Since 2009, Guastella Associates has served as the general manager of Daufuskie Island Utility Company, Inc. ("DIUC"), responsible for its day-to-day operations, billing, bookkeeping, financing, capital improvement projects and regulatory relations. DIUC provides water and wastewater service to some 550 connected customers and 600 availability customers located on Daufuskie Island, South Carolina. Guastella Associates also manages the Kiawah River Utility Company which provides wastewater services to a new development in South Carolina.

Key staff members have many years of combined experience in virtually every aspect of utility rate setting and valuation. The technical expertise of key staff, combined with their former employment by real estate and utility companies, a regulatory agency, and the management of water utilities, provides a total perspective towards addressing the rates and valuation needs of today's water and wastewater utilities.

Guastella Associates has assisted the largest privately-owned utilities with respect to the most challenging issues, performing complex studies and providing expert testimony in administrative hearings as well as court proceedings. In addition, our client base has included hundreds of small water and wastewater utilities - - obtaining rate increases that turn operating losses into profits, posturing them for financing, correcting record keeping errors and, for some, negotiating their sale at multiples of their original cost net investment rate base. Some of our most successful assignments have been to help establish new developer-related water and wastewater utilities, applying the correct principles at the outset in order to develop fully compensatory initial rates, record keeping procedures and asset management, so they are structured to become self-sustaining utilities that will achieve the highest possible profit and ultimate market value.

Our wide-range of experience and expertise has enabled us to successfully address the special needs of large investor-owned utilities in rate cases and condemnation proceedings.

OUTLINE OF SERVICES
GUASTELLA ASSOCIATES, LLC

Guastella Associates, LLC ("formerly John F. Guastella Associates, Inc.") is a consulting firm specializing in utility management, valuation, appraisals and rate determinations. Guastella Associates has been providing professional services to regulated and unregulated utilities since 1978.

Specific areas of expertise includes:

I. RATE ANALYSIS

A. Revenue Requirements

1. Examination of books and records -- revenues, expenses and capital investment.

2. Determination of the cost of providing service (revenue requirement) -- normalize historical data, establish known changes and perform projections.

B. Rate Design

1. Perform cost allocation studies to establish cost of service for residential, commercial, industrial, wholesale and fire protection customers, and for other special users.

2. Develop rate structures -- combine billing analyses and cost allocations to form usage rates, flat rates, minimum service and facilities charges, and such other special charges as connection fees, availability rates, etc.

C. Reports

1. Investor-owned utilities -- prepare complete rate filings for submission to regulatory agencies; prepare testimony, exhibits, and assist in all aspects of adjudication process.

2. Municipal utilities -- prepare detailed rate reports in support of rate increases for use by municipal officials and presentation at municipal hearings.

OUTLINE OF SERVICES
GUASTELLA ASSOCIATES, LLC

II. **VALUATIONS**

A. Appraisals

1. Eminent domain condemnation proceedings, negotiations for sale of utilities, damage claims for insurance and ad valorem tax and management purposes.

2. Determinations of original cost, replacement cost, reproduction cost and market value, including going concern value.

3. Calculation of the present value of cash flow under the income approach to market value determinations.

4. Analyses of market data under the sales comparison approach.

B. Depreciation

1. Actuarial studies using retirement rate or simulated plant balances methods to determine average service lives of physical property, theoretical depreciation reserve requirements and depreciation rates.

2. Establish affordable depreciation rates on the basis of comparative analyses of similar property of other utilities and practices of regulatory agencies and association

C. Feasibility Studies

1. Utility acquisitions by investors and municipalities.

2. Economic studies to establish extension of service costs and policy -- inside and outside service area.

3. Main extension agreements, guaranteed revenue contracts, refund provisions.

D. Financial Planning

1. Establish financing requirements for capital improvements.

2. Determine revenue and rate needs for various combinations of debt and equity financing.

3. Assist certain utilities in securing financing.

4. Establish financing needs, initial rates and regulatory approval of proposed new utilities.

III. **MANAGEMENT**

A. Operations

1. Provides general management of water and wastewater utilities.

2. Assist in day-to-day decisions as to utility accounting and related impact on rates.

3. Solve problems as to record keeping in accordance with regulatory requirements and prescribed systems of accounts.

4. Establish general policy and tariff provisions for customer service, billing, collecting, meter testing, complaint handling, and customer and regulatory relations.

B. Administrative

1. Coordinate activities with regulatory agencies to assure compliance with rules, regulations and orders.

2. Negotiations for purchase or sale of utility property and special contracts.

C. Training

1. On-the-job training for employees while working on various projects.
2. Special educational seminars on all aspects of utility rate settings, financing, valuation and rules.

PROFESSIONAL QUALIFICATIONS AND EXPERIENCE
of
JOHN F. GUASTELLA

B.S., Mechanical Engineering, Stevens Institute of Technology, 1962

Member:

American Water Works Association, Lifetime Member
National Association of Water Companies
New England Water Works Association, Lifetime Member

Committees:

AWWA, Water Rates Committee (Water Rates Manual M-1, 1983 Edition)
National Association of Regulatory Utility Commissioners (NARUC) and NAWC, Joint-Committee on Rate Design
NAWC, Rates and Revenues Committee
NAWC, Small Water Company Committee

Mr. Guastella is President of Guastella Associates, LLC ("formerly John F. Guastella Associates, Inc.") which provides management, valuation and rate consulting services for municipal and investor-owned utilities, as well as regulatory agencies. His clients include utilities in the states of Alaska, Arizona, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Missouri, Michigan, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, Texas, and Virginia. He has provided consulting services that include all aspects of utility regulation and rate setting, encompassing revenue requirements, revenues, operation and maintenance expenses, depreciation, taxes, return on investment, cost allocation and rate design. He has performed depreciation studies for the establishment of average service lives and depreciation rates of utility property. He has performed appraisals of utility companies for management purposes and in connection with condemnation proceedings. He has also negotiated the sale of utility companies. He directs the general management of a water and wastewater utility in South Carolina.

Mr. Guastella served for more than four years as President of Country Knolls Water Works, Inc., a water utility that served some 5,500 customers in Saratoga County, New York. He also served as a member of the Board of Directors of the National Association of Water Companies.

Mr. Guastella has qualified and testified as an expert witness before regulatory agencies and municipal jurisdictions in the states of Alaska, Arizona, California, Connecticut, Delaware, Florida, Georgia, Illinois, Kentucky, Indiana, Maryland, Massachusetts, Missouri, Montana, Nevada, New Hampshire, New Mexico, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, Texas and Virginia.

Prior to establishing his own firm, Mr. Guastella was employed by the New York State Public Service Commission for sixteen years. For two years he was involved in the regulation of electric and gas utilities, with the remaining years devoted to the regulation of water utilities. In 1970, he was promoted to Chief of Rates and Finance in the Commission's Water Division. In 1972, he was made Assistant Director of the Water Division. In 1974, he was appointed by Alfred E. Kahn, then Chairman of the Commission, to be Director of the Water Division, a position he held until he resigned from the Commission in August 1978.

At the Commission, his duties included the performance and supervision of engineering and economic studies concerning rates and service of many public utilities. As Director of the Water Division, he was responsible for the regulation of more than 450 water companies in New York State and headed a professional staff of 32 engineers and three technicians. A primary duty was to attend Commission sessions and advise the Commission during its decision making process. In the course of that process, an average of about fifty applications per year would be reviewed and analyzed. The applications included testimony, exhibits and briefs

involving all aspects of utility valuation and rate setting. He also made legislative proposals and participated in drafting Bills that were enacted into law: one expanded the N.Y. Public Service Commission's jurisdiction over small water companies and another dealt specifically with rate regulation and financing of developer-related water systems.

In addition to his employment and client experience, Mr. Guastella served as Vice-Chairman of the Staff-Committee on Water of the National Association of Regulatory Utility Commissioners (NARUC). This activity included the preparation of the "Model Record-Keeping Manual for Small Water Companies," which was published by the NARUC. This manual provides detailed instruction on the kinds of operation and accounting records that should be kept by small water utilities, and on how to use those records.

Each year since 1974 he has prepared study material, assisted in program coordination and served as an instructor at the Eastern Annual Seminar on Water Rate Regulation sponsored over the years by the NARUC in conjunction with the University of South Florida, Florida Atlantic University, the University of Utah, Florida State University, the University of Florida and currently Michigan State University. In 1980 he was instrumental in the establishment of the Western NARUC Rate Seminar and has annually served as an instructor since that time. This course is recognized as one of the best available for teaching rate-setting principles and methodology. More than 8,000 students have attended this course, including regulatory staff, utility personnel and members of accounting, engineering, legal and consulting firms throughout the country.

Mr. Guastella served as an instructor and panelist in a seminar on water and wastewater regulation conducted by the Independent Water and Sewer Companies of Texas. In 1998, he prepared and conducted a seminar on basic rate regulation on behalf of the New England Chapter of the National Association of Water Companies. In 2000 and 2001, Mr. Guastella developed and conducted a special seminar for developer related water and wastewater utilities in conjunction with Florida State University, and again in 2003 in conjunction with the University of Florida. It provided essential training for the financial structuring of small water and wastewater utilities, rate setting, financing and the establishment of their market value in the event of a negotiated sale or condemnation. In 2004, he prepared and conducted a special workshop seminar on behalf of the Office of Regulatory Staff of South Carolina, covering rate setting, valuation and general regulation of water and wastewater utilities. In 2006, he participated in an expert workshop on full cost pricing conducted by the U. S. Environmental Protection Agency in coordination with the Institute of Public Utilities, Michigan State University. In 2006 and again in 2013, he prepared and conducted a special seminar on rate setting and valuation on behalf of the New York Chapter of the NAWC. In 2007 and again in 2015, he prepared and conducted a special seminar on rate setting and valuation on behalf of the New England Chapter of NAWC.

Mr. Guastella has made presentations on a wide variety of rate, valuation and regulatory issues at meetings of the National Association of Regulatory Utility Commissioners, the American Water Works Association, the New England Water Works Association, the National Association of Water Companies, the New England Conference of Public Utilities Commissioners, the Florida, New England, New Jersey and New York Chapters of NAWC, the Mid-America Regulatory Conference, the Southeastern Association of Regulatory Utility Commissioners, the Pennsylvania Environmental Conference, the Public Utility Law Section of the New Jersey Bar Association, the U.S. Environmental Protection Agency Expert Workshop, the NAWC Water Utility Executive Council, and the National Drinking Water Symposium.

John F. Guastella
List of Proceedings in which
Expert Testimony
was Presented

Year	Client	State	Regulatory Docket/Case Number
1966	Sunhill Water Corporation	New York	23968
1967	Amagansett Water Company	New York	24210
1967	Worley Homes, Inc.	New York	24466
1968	Amagansett Water Company	New York	24718
1968	Amagansett Water Company	New York	24883
1968	Sunhill Water Corporation	New York	23968
1968	Worley Homes, Inc.	New York	Supreme Court
1969	Amagansett Water Supply	New York	24883
1969	Citizens Water Supply Co.	New York	25049
1969	Worley Homes, Inc.	New York	24466/24992
1970	Brooklyn Union Gas Company	New York	25448
1970	Consolidated Edison of New York	New York	25185
1971	Hudson Valley Water Companies	New York	26093
1971	Jamaica Water Supply Company	New York	26094
1971	Port Chester Water Works, Inc.	New York	25797
1971	U & I Corp. - Merrick District	New York	26143
1971	Wanakah Water Company	New York	25873
1972	Spring Valley Water Company	New York	26226
1972	U & I Corp. - Woodhaven District	New York	26232
1973	Citizens Water Supply Company	New York	26366
1978	Rhode Island DPU&C (Bristol County)	Rhode Island	1367A
1979	Candlewick Lake Utilities Co.	Illinois	76-0218
1979	Candlewick Lake Utilities Co.	Illinois	76-0347
1979	Candlewick Lake Utilities Co.	Illinois	78-0151
1979	Jacksonville Suburban Utilities	Florida	770316-WS
1979	New York Water Service Corporation	New York	27594
1979	Salem Hills Sewerage Disposal Corp. v. V. of Voorheesville	New York	Supreme Court

John F. Guastella
List of Proceedings in which
Expert Testimony
was Presented

Year	Client	State	Regulatory Docket/Case Number
1979	Seabrook Water Corporation	New Jersey	7910-846
1979	Southern Utilities Corporation	Florida	770317-WS
1979	Township of South Brunswick	New Jersey	Municipal
1979	Westchester Joint Water Works	New York	Municipal
1979	Woodhaven Utilities Corporation	Illinois	77-0109
1980	Crestwood Village Sewer Company	New Jersey	BPU 802-78
1980	Crestwood Village Water Company	New Jersey	BPU 802-77
1980	Gateway Water Supply Corporation	Texas	Municipal
1980	GWW-Central Florida District	Florida	800004-WS
1980	Jamaica Water Supply Company	New York	27587
1980	Rhode Island DPU&C (Newport Water)	Rhode Island	1480
1981	Briarcliff Utilities, Inc.	Texas	3620
1981	Candlewick Lake Utilities Co.	Illinois	81-0011
1981	Caroline Water Company, Inc.	Virginia	810065
1981	GDU, Inc. - Northport	Florida	Municipal
1981	GDU, Inc. - Port Charlotte	Florida	Municipal
1981	GDU, Inc. - Port Malabar	Florida	80-2192
1981	Hobe Sound Water Company	Florida	8000776
1981	Lake Buckhorn Utilities, Inc.	Ohio	80-999
1981	Lake Kiowa Utilities, Inc.	Texas	3621
1981	Lakengren Utilities, Inc.	Ohio	80-1001
1981	Lorelei Utilities, Inc.	Ohio	80-1000
1981	New York Water Service Corporation	New York	28042
1981	Rhode Island DPU&C (Newport Water)	Rhode Island	1581
1981	Shawnee Hills Utility Company	Ohio	80-1002
1981	Smithville Water Company, Inc.	New Jersey	808-541
1981	Spring Valley Water Company, Inc.	New York	27936
1981	Spring Valley Water Company, Inc.	New York	27936
1981	Sunhill Water Corporation	New York	27903

John F. Guastella
List of Proceedings in which
Expert Testimony
was Presented

Year	Client	State	Regulatory Docket/Case Number
1981	Swan Lake Water Corporation	New York	27904
1982	Chesterfield Commons Sewer Company	New Jersey	822-84
1982	Chesterfield Commons Water Company	New Jersey	822-83
1982	Crescent Waste Treatment Corp.	New York	Municipal
1982	Crestwood Village Sewer Company	New Jersey	821-33
1982	Crestwood Village Water Company	New Jersey	821-38
1982	Salem Hills Sewerage Disposal Corp.	New York	Municipal
1982	Township of South Brunswick	New Jersey	Municipal
1982	Woodhaven Utilities Corporation	Illinois	82-0167
1983	Country Knolls Water Works, Inc.	New York	28194
1983	Heritage Hills Water Works Corp.	New York	28453
1984	Crestwood Village Sewer Company	New Jersey	8310-861
1984	Crestwood Village Water Company	New Jersey	8310-860
1984	Environmental Disposal Corp.	New Jersey	816-552
1984	GDU, Inc. - Port St. Lucie	Florida	830421
1984	Heritage Village Water (water/sewer)	Connecticut	84-08-03
1984	Hurley Water Company, Inc.	New York	28820
1984	New York Water Service Corporation	New York	28901
1985	Deltona Utilities (water/sewer)	Florida	830281
1985	J. Filiberto Sanitation, Inc.	New Jersey	8411-1213
1985	Sterling Forest Pollution Control	New York	Municipal
1985	Water Works Enterprise, Grand Forks	North Dakota	Municipal
1986	GDU, Inc. - Port Charlotte	Florida	Municipal
1986	GDU, Inc. - Sebastian Highlands	Florida	Municipal
1986	Kings Grant Water/Sewer Companies (settled)	New Jersey	WR8508-868
1986	Mt. Ebo Sewage Works, Inc.	New York	Municipal
1986	Sterling Forest Pollution Control	New York	Municipal
1987	Country Knolls Water Works, Inc.	New York	29443
1987	Crestwood Village Sewer Co. (settled)	New Jersey	WR8701-38

John F. Guastella
List of Proceedings in which
Expert Testimony
was Presented

Year	Client	State	Regulatory Docket/Case Number
1987	Deltona Utilities – Marco Island	Florida	85151-WS
1987	Deltona Utilities, Inc. - Citrus Springs (settled)	Florida	870092-WS
1987	First Brewster Water Corp. v. Town of Southeast (settled)	New York	Supreme Court
1987	GDU, Inc. - Silver Springs Shores	Florida	870239-WS
1987	Ocean County Landfill Corporation	New Jersey	SR-8703117
1987	Palm Coast Utility Corporation	Florida	870166-WS
1987	Sanlando Utilities Corp. (settled)	Florida	860683-WS
1987	Township of South Brunswick	New Jersey	Municipal
1987	Woodhaven Utilities Corp. (settled)	Illinois	87-0047
1988	Crescent Estates Water Co., Inc.	New York	88-W-035
1988	Elizabethtown Water Co.	New Jersey	OAL PUC3464-88
1988	Heritage Village Water Company	Connecticut	87-10-02
1988	Instant Disposal Service, Inc.	New Jersey	SR-87080864
1988	J. Filiberto Sanitation v. Morris County Transfer Station	New Jersey	01487-88
1988	Ohio Water Service Co.	Ohio	86-1887-WW-CO1
1988	St. Augustine Shores Utilities	Florida	870980-WS
1989	Elizabethtown Water Co.	New Jersey	BPU WR89020132J
1989	GDU (FPSC generic proceeding as to rate setting procedures)	Florida	880883-WS
1989	Gordon's Corner Water Co.	New Jersey	OAL PUC479-89
1989	Heritage Hills Sewage Works	Connecticut	Municipal
1989	Heritage Village Water Company	Connecticut	87-10-02
1989	Palm Coast Utility Corporation	Florida	890277-WS
1989	Southbridge Water Supply Co.	Massachusetts	DPU 89-25
1989	Sterling Forest Water Co.	New York	PSC 88-W-263
1990	American Utilities, Inc. - United States Bankruptcy Court	New Jersey	85-00316
1990	City of Carson City	Nevada	Municipal
1990	Country Knolls Water Works, Inc.	New York	90-W-0458
1990	Elizabethtown Water Company	New Jersey	WR900050497J

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List of Proceedings in which
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Year	Client	State	Regulatory Docket/Case Number
1990	Kent County Water Authority	Rhode Island	1952
1990	Palm Coast Utility Corporation	Florida	871395-WS
1990	Southern States Utilities, Inc.	Florida	Workshop
1990	Trenton Water Works	New Jersey	WR90020077J
1990	Waste Management of New Jersey	New Jersey	SE 87070552
1990	Waste Management of New Jersey	New Jersey	SE 87070566
1991	City of Grand Forks	North Dakota	Municipal
1991	Gordon's Corner Water Co.	New Jersey	OAL PUC8329-90
1991	Southern States Utilities, Inc.	Florida	900329-WS
1992	Elizabethtown Water Co.	New Jersey	WR 91081293J
1992	General Development Utilities, Inc. - Port Malabar Division	Florida	911030-WS
1992	General Development Utilities, Inc. - West Coast Division	Florida	911067-WS
1992	Heritage Hills Water Works, Inc.	New York	92-2-0576
1993	General Development Utilities, Inc. - Port LaBelle Division	Florida	911737-WS
1993	General Development Utilities, Inc. - Silver Springs Shores	Florida	911733-WS
1993	General Waterworks of Pennsylvania - Dauphin Cons. Water Supply	Pennsylvania	R-00932604
1993	Kent County Water Authority	Rhode Island	2098
1993	Southern States Utilities - FPSC Rulemaking	Florida	911082-WS
1993	Southern States Utilities - Marco Island	Florida	920655-WS
1994	Capital City Water Company	Missouri	WR-94-297
1994	Capital City Water Company	Missouri	WR-94-297
1994	Elizabethtown Water Company	New Jersey	WR94080346
1994	Elizabethtown Water Company	New Jersey	WR94080346
1994	Environmental Disposal Corp.	New Jersey	WR94070319
1994	General Development Utilities - Port Charlotte	Florida	940000-WS
1994	General Waterworks of Pennsylvania	Pennsylvania	R-00943152

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was Presented

Year	Client	State	Regulatory Docket/Case Number
1994	Hoosier Water Company - Mooresville Division	Indiana	39839
1994	Hoosier Water Company - Warsaw Division	Indiana	39838
1994	Hoosier Water Company - Winchester Division	Indiana	39840
1994	West Lafayette Water Company	Indiana	39841
1994	Wilmington Suburban Water Corporation	Delaware	94-149 (stld)
1995	Butte Water Company	Montana	Cause 90-C-90
1995	Heritage Hills Sewage Works Corporation	New York	Municipal
1996	Consumers Illinois Water Company	Illinois	95-0342
1996	Elizabethtown Water Company	New Jersey	WR95110557
1996	Palm Coast Utility Corporation	Florida	951056-WS
1996	PenPac, Inc.	New Jersey	OAL-00788-93N
1996	Southern States Utilities, Marco Island	Florida	950495-WS
1997	Crestwood Village Water Company	New Jersey	BPU 96100739
1997	Indiana American Water Co., Inc.	Indiana	IURC 40703
1997	Missouri-American Water Company	Missouri	WR-97-237
1997	South County Water Corp	New York	97-W-0667
1997	United Water Florida	Florida	960451-WS
1998	Consumer Illinois Water Company	Illinois	98-0632
1998	Consumers Illinois Water Company	Illinois	97-0351
1998	Heritage Hills Water Company	New York	97-W-1561
1998	Missouri-American Wastewater Company	Missouri	SR-97-238
1999	Consumers Illinois Water Company	Illinois	99-0288
1999	Environmental Disposal Corp.	New Jersey	WR99040249
1999	Indiana American Water Co., Inc.	Indiana	IURC 41320
2000	South Haven Sewer Works, Inc.	Indiana	Cause: 41410
2000	Utilities Inc. of Maryland	Maryland	CAL 97-17811
2001	Artesian Water Company	Delaware	00-649
2001	Citizens Utilities Company	Illinois	01-0001
2001	Elizabethtown Water Company	New Jersey	WR-0104205

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Year	Client	State	Regulatory Docket/Case Number
2001	Kiawah Island Utility, Inc.	South Carolina	2001-164-W/S
2001	Placid Lakes Water Company	Florida	011621-WU
2001	South Haven Sewer Works, Inc.	Indiana	41903
2001	Southlake Utilities, Inc.	Florida	981609-WS
2002	Artesian Water Company	Delaware	02-109
2002	Consumers Illinois Water- Grant Park	Illinois	02-0480
2002	Consumers Illinois Water- Village Woods	Illinois	02-0539
2002	Valencia Water Company	California	02-05-013
2003	Consumers Illinois Water - Indianola	Illinois	03-0069
2003	Elizabethtown Water Company	New Jersey	WR-030-70510
2003	Golden Heart Utilities, Inc.	Alaska	U-02-13, 14 & 15
2003	Utilities, Inc. – Georgia	Georgia	CV02-0495-AB
2004	Aquarion Water Company	Connecticut	04-02-14
2004	Artesian Water Company	Delaware	04-42
2004	El Dorado Utilities, Inc.	New Mexico	D-101-CU-2004-
2004	Environmental Disposal Corp.	New Jersey	DPU WR 03 070509
2004	Heritage Hills Water Company	New York	03-W-1182
2004	Sun Valley Water & Washoe County Dept. of Water Revenues	Nevada	TMWA Municipal
2004	Jersey City MUA	New Jersey	Municipal
2004	Rockland Electric Company	New Jersey	EF02110852
2005	Aquarion Water Company	New Hampshire	DW 05-119
2005	Intercoastal Utilities, Inc.	Florida	04-0007-0011-0001
2005	Haig Point Utility Company, Inc.	South Carolina	2005-34-W/S
2005	South Central Connecticut Regional Water Auth.	Connecticut	Municipal
2006	Pennichuck Water Works, Inc.	New Hampshire	DW-04048
2006	Village of Williston Park	New York	Municipal
2006	Jersey City MUA	New Jersey	Municipal
2006	Groton Utilities	Connecticut	Municipal

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Year	Client	State	Regulatory Docket/Case Number
2006	Connecticut Water Company	Connecticut	06-07-08
2006	Birmingham Utilities, Inc.	Connecticut	06-05-10
2006	Aqua Florida Utilities, Inc.	Florida	060368-WS
2007	Aquarion Water Company of CT	Connecticut	07-05-19
2007	Pennichuck Water Works, Inc.	New Hampshire	DW 04-048
2007	Aqua Indiana - Utility Center	Indiana	43331
2007	Environmental Disposal Corp.	New Jersey	WR 04 080760
2007	Aqua Florida Utilities, Inc.	Florida	07-0183
2007	Aqua Illinois, Inc. - Hawthorn Woods, Willowbrook & Vermilion	Illinois	07-0620/07-0621/08-0067
2008	Aqua Florida Utilities, Inc.	Florida	080121-WS
2008	Aquarion Water Company of MA	Massachusetts	D.P.U. 08-27
2008	Haig Point Utility Company, Inc.	South Carolina	2007-414-WS
2009	R.M.V. Land & C.M. Livestock, L.C.C.	New Jersey	EM02050313
2010	City of Griffin	Georgia	Civil Action No. 09V-2866
2010	Connecticut Water Company	Connecticut	09-12-11
2010	Montville WPCA	Connecticut	1400012464
2010	Milford Water Company	Massachusetts	DPU 10-78
2010	Arizona American Water Company	Arizona	W-01303A-10-0448
2011	Aqua Illinois	Illinois	ICC Docket (Consolidated)
2011	Artesian Water Company	Maryland	MPSC Case 9252
2011	Artesian Water Company	Delaware	PSC 11-207
2011	Kiawah Island Utility, Inc.	South Carolina	2011-317-WS
2012	Washington Gas Light	Maryland	Senate SB541
2012	Washington Gas Light	Maryland	House HB662
2012	Daufuskie Island Utility	South Carolina	2011-229-W/S
2012	Milford Water Company	Massachusetts	DPU 12-86
2013	Artesian Water Company	Pennsylvania	2:10-CV-07453-JP
2013	Aquarion Water Company - Oxford	Massachusetts	CA 09-00592E

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Year	Client	State	Regulatory Docket/Case Number
2013	Water Management Services	Florida	110200-WU
2013	City of Fernandina Beach	Florida	Civil Action No. 13CA000485AXYX
2013	City of Elizabeth	New Jersey	Docket Nos. UNN-L-0556-10 and UNN-L-2608-11
2014	Daufuskie Island Utility Company, Inc.	South Carolina	Case No. 2013-CP-7-02255
2014	Artesian Water Company	Delaware	Docket No. PSC 14-132
2014	Aquarion Water Company - Hingham	New Hampshire	SUCU 2013-03159-BLS2
2015	EPCOR	Arizona	ACC Docket # WS-01303A-14-0010
2015	Mountain Water Company	Montana	Case # DV-14-352
2015	Daufuskie Island Utility Company, Inc.	South Carolina	Docket No. 2014-346-WS
2015	Housatonic Water Works	Massachusetts	D.P.U. 15-179
2016	Epcor Water Arizona	Arizona	Docket No. W501303A-16-0145
2016	Community Utilities of Indiana	Indiana	Case No. 44724
2016	Utilities Inc. of Florida	Florida	Docket No. 16101-WS
2017	Epcor Water Arizona	Arizona	Docket No. W10303A-17-0141
2017	Aquarion Water Company of Massachusetts	Massachusetts	D.P.U. 17-90
2017	Milford Water Company	Massachusetts	D.P.U. 17-107
2018	Water Services Corp. of Kentucky	Kentucky	Case No. 2018-00208
2018	Epcor Water New Mexico, Inc.	New Mexico	Case No. 18_00124-UT
2019	Daufuskie Island Utility Company, Inc.	South Carolina	Docket No. 2018-364
2020	Epcor-Johnson Utilities, LLC	Arizona	Docket No. WS-02987A-20

Papers and Presentations
By
John F. Guastella

Year	Title	Forum
1974 through 2019	1. Basics of Rate Setting 2. Cost Allocation and Rate Design 3. Revenue Requirements	Semi-annual seminars on utility rate regulation, National Association of Regulatory Utility Commissioners, sponsored by the University of South Florida, the University of Utah, Florida State University, The University of Florida and Michigan State University, and currently the NARUC Water Committee.
1974	Rate Design Studies: A Regulatory Point-of- View	Annual convention of the National Association of Water Companies, New Haven, Connecticut
1976	Lifeline Rates	Annual convention of the National Association of Water Companies, Chattanooga, Tennessee
1977	Regulating Water Utilities: The Customers' Best Interest	Annual symposium of the New England Conference of Public Utilities Commissioners, Mystic Seaport, Connecticut
1978	Rate Design: Preaching v. Practice	Annual convention of the National Association of Water Companies, Baton Rouge, Louisiana
1979	Small Water Companies	Annual symposium of the New England Conference of Public Utilities Commissioners, Newport, Rhode Island
1979	Rate Making Problems Peculiar to Private Water and Sewer Companies	Special educational program sponsored by Independent Water and Sewer Companies of Texas, Austin, Texas
1980	Water Utility Regulation	Annual meeting of the National Association of Regulatory Utility Commissioners, Houston, Texas
1981	The Impact of Water Rates on Water Usage	Annual Pennsylvania Environmental Conference, Harrisburg, Pennsylvania
1981	A Realistic Approach to Regulating Water Utilities	Mid-America Regulatory Conference, Clarksville, Indiana
1982	Issues in Water Utility Regulation	Annual symposium of the New England Conference of Public Utilities Commissioners, Rockport, Maine
1982	New Approaches to the Regulation of Water Utilities	Southeastern Association of Regulatory Utility Commissioners, Asheville, North Carolina
1983	Allocating Costs and Revenues Fairly and Effectively	Maryland Water and Sewer Finance Conference, Westminster, Maryland
1983	Lifeline and Social Policy Pricing	Annual conference of the American Water Works Association, Las Vegas, Nevada (published)
1984	The Real Cost of Service: Some Special Considerations	Annual New Jersey Section AWWA Spring Meeting, Atlantic City, New Jersey
1987	Margin Reserve: It's Not the Issue	Florida Waterworks Association Newsletter, April/May/June 1987 issue

Papers and Presentations
By
John F. Guastella

Year	Title	Forum
1987	A "Current" Issue: CIAC	NAWC - New England Chapter November 6, 1987 meeting
1988	Small Water Company rate Setting: Take It or Leave It	NAWC - New York Chapter June 14, 1988 meeting
1989	The Solution to all the Problems of Good Small Water Companies	NAWC Quarterly magazine, Winter issue
1989	Current Issues Workshop - Panel	New England Conference of Public Utilities Commissioners, Kennebunkport, Maine
1991	Alternative Rate Structures	New Jersey Section 1991 Annual Conference, AWWA, Atlantic City, New Jersey
1994	Conservation Impact on Water Rates	New England NAWC and New England AWWA, Sturbridge, Massachusetts
1996	Utility Regulation - 21st Century	NAWC Annual Meeting, Orlando, Florida
1997	Current Status Drinking Water State Revolving Fund	NAWC Annual Meeting, San Diego, California
1998	Small Water Companies - Problems and Solutions	NAWC Annual Meeting, Indianapolis, Indiana
1998	Basic Rate Regulation Seminar	New England Chapter - NAWC, Rockport, Maine
2000	Developer Related Water and Sewer Utilities Seminar	Florida State University, Orlando, Florida
2001	Developer Related Water and Sewer Utilities Seminar	Florida State University, Orlando, Florida
2002	Regulatory Cooperation - Small Company Education	New England Chapter - NAWC, Annual Meeting
2003	Developer Related Water and Sewer Utilities Seminar	University of Florida, Orlando, Florida
2004	Basic Regulation & Rate Setting Training Seminar	Office of Regulatory Staff, Columbia, South Carolina
2005	Municipal Water Rates	Nassau-Suffolk Water Commissioners Association, Franklin Square, New York
2005	Innovations in Rate Setting and Procedures	NAWC New York Chapter, West Point, New York

Papers and Presentations
By
John F. Guastella

Year	Title	Forum
2006	Basics of Rate Setting	The Connecticut Water Company, Clinton, Connecticut
2006	Innovations in Rate Setting and Procedures	NAWC New York Chapter, Catskill, New York
2006	Best Practices as Regulatory Policy	NAWC New England Chapter, Ogunquit, Maine
2006	Rate and Valuation Seminar	NAWC New York Chapter
2006	Full Cost Pricing	U.S. Environmental Protection Agency Expert Workshop, Lansing, Michigan
2006	Innovations in Rate Setting	NAWC New England Chapter, Portsmouth, New Hampshire
2007	Weather Sensitive Customer Demands	NAWC Water Utility Executive Council, Half Moon Bay, California
2007	Basics of Rate Setting and Valuation Seminar	NAWC New England Chapter, Ogunquit, Maine
2007	Small Company Characteristics	National Drinking Water Symposium, La Jolla, California
2013	Rate and Valuation Seminar	NAWC New York Chapter
2015	Rate and Valuation Seminar	NAWC New England Chapter

EPCOR Water Arizona Inc.
Docket No. WS-01303A-20-XXXX
Test Year Ended December 31, 2019

EPCOR Direct Testimony

Mr. Bickey Rimal

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

ROBERT "BOB" BURNS, Chairman
BOYD DUNN
SANDRA D. KENNEDY
JUSTIN OLSON
LEA MÁRQUEZ PETERSON

IN THE MATTER OF THE APPLICATION OF EPCOR WATER ARIZONA INC. FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND INCREASES/DECREASES IN ITS RATES AND CHARGES BASED THEREON FOR UTILITY SERVICE BY ITS AGUA FRIA, ANTHEM, CHAPARRAL, HAVASU, MOHAVE, NORTH MOHAVE, PARADISE VALLEY, SUN CITY, SUN CITY WEST, TUBAC, AND WILLOW VALLEY WATER DISTRICTS AND FOR CONSIDERATION OF CONSOLIDATION PROPOSALS	DOCKET NO: WS-01303A-20-____

DIRECT TESTIMONY
OF
BICKEY RIMAL
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

DIRECT TESTIMONY
OF
BICKEY RIMAL
ON BEHALF OF
EPCOR WATER ARIZONA INC.
JUNE 15, 2020

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EXECUTIVE SUMMARY

Mr. Rimal presents and supports the allocated cost of service studies as well as the rate design studies prepared for each of the 11 water districts. The purpose of his studies is to first determine the embedded costs of serving the various water customers, and then design rates that are reasonable and appropriate for recovering the test year revenue requirements from the various customers. In addition, Mr. Rimal is supporting cost of service studies as well as rate design for certain consolidation scenarios explored by the Company. Finally, Mr. Rimal also presents testimony regarding the weather normalization adjustments in this proceeding.

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND JOB TITLE.

A. My name is Bickey Rimal. My business address is 1300 19th Street NW, Suite 620, Washington, DC 20036. I am a Senior Project Manager at Concentric Energy Advisors, Inc. ("Concentric"). Concentric is a management consulting and financial advisory firm with a focus on North American energy and utility industry.

Q. WOULD YOU PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND?

A. I have over 11 years of progressive experience in the energy and environmental sector. I joined Concentric in 2011 and have held the positions of Associate, Assistant Consultant, Consultant, Senior Consultant and Project Manager. While at Concentric, I have provided expert testimony on multiple occasions in rate related matters. In addition, I have led and contributed to projects involving revenue requirement, cost of service, rate design, rate of return estimation, energy market assessments, and utility performance benchmarking. My work often involves financial modeling, statistical analysis, and regulatory research.

I hold a B.A. degree from Colgate University and an M.A. degree with a major in international public affairs with a focus on Energy Policy from the University of Wisconsin-Madison.

I also worked at ICF International, a global energy and environmental consulting firm, for three years, where I was extensively involved in projects dealing with policy design and implementation, economic impact analysis, regulatory evaluation, statistical

analysis, and environmental risk assessment. A copy of my resume is attached as Exhibit BR-6.

Q. DO YOU BELONG TO ANY PROFESSIONAL ORGANIZATIONS?

A. Yes. I am a member of the American Water Works Association ("AWWA").

Q. HAVE YOU PRESENTED EXPERT TESTIMONY IN OTHER PROCEEDINGS?

A. Yes. I provided expert testimony on behalf of Northern Indiana Public Service Company LLC in their last two electric rate case proceedings (Cause Nos. 44688 and 45159). I also provided expert testimony on behalf of Indianapolis Power & Light Company regarding a special contract (Cause No. 45211).

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of EPCOR Water Arizona Inc. ("EWAZ" or "Company") in this proceeding.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to present and support the allocated cost of service studies as well as the rate design studies prepared for each of the 11 water districts. The purpose of these studies is to first determine the embedded costs of serving the various water customers, and then design rates that are reasonable and appropriate for recovering the test year revenue requirements from the various customers. I am also supporting cost of service studies as well as rate design for the four consolidation scenarios explored by the Company (in addition to continued stand-alone rates). I am

also presenting testimony regarding weather normalization adjustments in this proceeding.

Q. PLEASE IDENTIFY THE SCHEDULES YOU ARE SPONSORING.

A. I am sponsoring the schedules listed below for each of the 11 water districts on a stand-alone basis as well as for the consolidated groups (Groups A through G), which were all prepared by me or under my supervision and direction.

Schedule	Description
Schedule G-1	Cost of Service Summary-Present Rates
Schedule G-2	Cost of Service Summary-Proposed Rates
Schedule G-3	Rate Base Allocation to Classes of Service
Schedule G-4	Expense Allocation to Classes of Service
Schedule G-5	Distribution of Rate Base by Function
Schedule G-6	Distribution of Expenses by Function
Schedule G-7	Development of Allocation Factors
Schedule G-8	Comparison of Cost of Service with Revenues under Present and Proposed Rates
Schedule G-9	Allocation of Total Cost of Service by Cost Function to Customer Classifications
Schedule H-1	Summary of Revenues by Customer Classification-Present and Proposed Rates
Schedule H-2	Analysis of Revenue by Detailed Class
Schedule H-3	Changes In Representative Rate Schedules
Schedule H-4	Typical Bill Analysis

Q. ARE YOU SPONSORING ANY EXHIBITS WITH YOUR DIRECT TESTIMONY AND WERE THE EXHIBITS PREPARED BY YOU OR UNDER YOUR SUPERVISION AND DIRECTION?

A. Yes, I am sponsoring the exhibits listed below, which were all prepared by me or under my supervision and direction.

Exhibit	Description
BR-1	Bill Impacts under Consolidation Scenarios
BR-2	Difference Between Actual and Normal Weather
BR-3	Regression Output for Each District
BR-4	Weather Adjustment Calculation Example
BR-5	Normalization Results for Each District
BR-6	Resume

III. ALLOCATED COST OF SERVICE

Q. WHAT IS THE PURPOSE OF AN ALLOCATED COST OF SERVICE STUDY?

A. The purpose of an allocated cost of service ("ACOS") study is to allocate EWAZ's overall revenue requirement to the various customer classes in a manner that reflects the relative costs of providing service to each class. This is accomplished by analyzing the capital and operating costs of the Company and assigning these costs to individual customers on the basis of how these costs are incurred and which customers benefit from such costs. The results of the ACOS study can be utilized to determine the relative cost to provide service to each customer class and to help determine the revenue responsibility of each individual class. The results will also provide useful guidance in terms of designing the rates for each customer class.

Q. WHAT COST ALLOCATION METHOD DID YOU USE IN YOUR STUDIES?

A. I used the Commodity Demand Method for cost allocation in my studies. The Commodity Demand Method is a widely used cost allocation method by water utilities throughout the country and has been accepted by the ACC. The AWWA recognizes the Commodity Demand Method as one of the two most widely used cost allocation methods.[1]

[1] AWWA Cost Manual, *Principles of Water Rates, Fees and Charges*, M1 Seventh Edition.

Q. PLEASE DESCRIBE THE COMMODITY DEMAND METHOD OF ALLOCATION IN MORE DETAIL.

A. In the Commodity Demand Method, the various cost elements are assigned to various cost functions: commodity; demand; customer facilities (meters and services); customer accounting; and direct fire costs.

Commodity costs are costs that tend to vary directly with the quantity of water supplied. The cost of chemicals used to treat water, cost of power used for pumping water, and purchased water are some examples of costs assigned to the commodity function.

Demand costs are the costs associated with facilities used to provide water service during the peak times of use. For example, the pumping facilities, treatment plants, and transmission and distribution mains are sized to meet the peak requirement of the system. Demand costs were broken down further into facilities designed to serve the peak daily demand and the peak hourly demand. Commodity costs are associated with actual amount of water used whereas demand costs are associated with having the necessary capacity to deliver the maximum amount of commodity that a customer's premise is able to draw at any given instant. This is why monthly service charges increase for larger-metered customers. At any instantaneous point in time, a customer with a larger meter can "demand" more from the system.

Customer costs are costs that tend to vary with the number of customers and not with the volume of water used or the peak demand placed on the system. These costs can be divided into two main cost components - costs associated with customer facilities, and customer accounting costs. Customer facilities are the capital and operating costs associated with meters and services. Customer accounting costs are operating costs associated with meter reading, billing, customer service and accounting, and collection.

Direct fire costs are the costs associated with fire protection services. These costs are related to public fire hydrants and private fire protection services.

Q. PLEASE BRIEFLY DESCRIBE THE GENERAL PROCESS YOU FOLLOWED IN YOUR ACOS STUDY.

A. As mentioned earlier, the primary purpose of an ACOS study is to allocate EWAZ's overall revenue requirement to the various customer classes in a manner that reflects the relative costs of providing service to each class (i.e., cost causation). The first step in the ACOS study was to assign each cost item to an activity (supply, pumping, treatment, transmission and distribution, etc.). The second step was to assign each cost item to a functional cost category described above (commodity, maximum daily demand, maximum hourly demand, meter, services, customer accounting, and direct fire). The third and final step was the allocation of these various functionalized cost elements to the various customer classes and determine the total cost responsibility of each class.

Q. HOW DID YOU ASSIGN EACH COST ITEM TO AN ACTIVITY?

A. The assignment of each cost item to an activity was primarily based on the Company's chart of accounts and account description. For example, Plant Account 320 (Water Treatment Equipment) was assigned to Treatment activity. Similarly, Plant Account 331 (Transmission & Distribution Mains) was assigned to Transmission and Distribution activity.

Q. HOW DID YOU ASSIGN EACH COST ITEM TO A FUNCTIONAL COST CATEGORY?

A. Each cost item was assigned to one of the seven functional cost category: commodity, maximum daily demand, maximum hourly demand, meter, services, customer

accounting, and direct fire. The rate base items and expenses were assigned to one of the seven functional cost categories.

Q. HOW DID YOU ASSIGN A FUNCTIONAL COST CATEGORY TO THE VARIOUS RATE BASE ITEMS?

A. The assignment of functional cost categories to the rate base items followed the type of service these assets are designed to provide. The pumping plant, and the treatment plant are designed to meet the peak day demand and were assigned to the maximum day functional cost category. The transmission and distribution mains are designed to meet the peak hour demand and were correspondingly assigned to the maximum hour functional cost category. Supply-related plant items were assigned to the commodity function. Investments in meters and services were assigned to the meter and service functions, respectively. Indirect plant costs, such as general and intangible plant were allocated to functional cost categories using internally developed factors that are based on plant ratios. Schedule G-5 shows the assignment of each of the rate base items to a functional cost category. Rate base details shown in Schedule G-5 originate from Schedules E-1 and E-5, which support the Rate Base schedules (Schedules B-1 and B-2) prepared by the Company.

Q. HOW DID YOU ASSIGN A FUNCTIONAL COST CATEGORY TO EXPENSES?

A. The expense items were assigned to functional cost categories in a similar manner as the associated rate base items. Functionalized labor costs were allocated to functional costs in the same manner that the plant items were allocated. For example, labor expense associated with treatment was assigned to the maximum day function, similar to how treatment plant was allocated. However, certain expenses that vary with the

amount of water produced were assigned to the commodity function. For example, the chemical costs required for treatment of water were assigned to commodity function and not to maximum day function. Depreciation expenses were assigned to function following the same assignment as the corresponding plant items. Customer accounting expenses were assigned to customer accounting function. Indirect expenses items were allocated to functional cost categories using internally developed factors that are based on plant or expense ratios. For example, Group Insurance was assigned to functions using the same basis as the total labor expense was allocated to functions. Schedule G-6 shows the assignment of each of the expense items to a functional cost category. The expense detail shown in Schedule G-6 comes from Schedules C-1 and C-2 prepared by the Company. Other expenses like taxes other than income; and income taxes were assigned to functional categories based on how rate base and total plant was assigned.

Q. HOW DID YOU ALLOCATE THE FUNCTIONALIZED COSTS TO EACH CUSTOMER CLASS?

A. Schedule G-7 shows the allocation factors used to allocate the functionalized costs to the various customer classes. Schedule G-7, page 1 contains a summary of all the external allocation factors used in the study.

Q. PLEASE DESCRIBE THE FACTORS USED TO ALLOCATE THE COMMODITY COSTS TO THE VARIOUS CLASSES.

A. Commodity costs were allocated to the various classes using Factor A, which is based on the average daily water consumption by each class. Factor A is presented on page 3 of Schedule G-7.

Q. WHAT FACTORS DID YOU USE TO ALLOCATE DEMAND-RELATED COSTS?

A. Demand costs were allocated to the various classes using Factors B and C. Factor B is based on the estimated peak day demand of each class and is used to allocate maximum daily demand costs to the various classes of customers. Similarly, Factor C is based on the estimated peak hourly demand of each class and is used to allocate maximum hourly demand costs to the various classes of customers. Factors B and C are presented on page 3 of Schedule G-7.

Q. HOW DID YOU ALLOCATE THE METER- AND SERVICE-RELATED COSTS TO THE VARIOUS CUSTOMER CLASSES?

A. Meter- and service-related costs were allocated to the various customer classes using Factor D and Factor E, respectively. Factor D is based on the relative cost of meters by meter size and count of meters used by each customer class and is used to allocate the meter related costs to the various classes. Factor D is shown on page 4 of Schedule G-7 and the calculations supporting Factor D can be found on page 6. Factor E is based on the relative cost of service by service size and number of services used by each customer class and is used to allocate service-related costs to the various classes. Factor E is shown on page 4 of Schedule G-7 and the calculations supporting Factor E can be found on page 7.

Q. WHAT FACTORS DID YOU USE TO ALLOCATE THE CUSTOMER ACCOUNTING, CUSTOMER SERVICE, METER READING, AND BILLING AND COLLECTION COSTS TO THE CUSTOMER CLASSES?

A. I used Factor F to allocate the customer accounting, customer service, meter reading, and billing and collection costs to the customer classes. Factor F is based on the number of bills associated with each class and is shown on page 4 of Schedule G-7.

Q. HOW WERE THE DIRECT FIRE COSTS ALLOCATED?

A. Factor G was used to allocate the direct fire costs to Private Fire and Public Fire and is shown on page 5 of Schedule G-7. The cost allocated to public fire are allocated to other classes that benefit from this service (i.e. Residential and Commercial customers) based on the number of equivalent meters.

Q. HOW DID YOU ALLOCATE THE VARIOUS INDIRECT COSTS?

A. Indirect costs like General and Intangible plant, and Administrative and General expenses were allocated using internally developed allocation factors within the study, and are shown on page 2 of Schedule G-7.

Q. WHICH SCHEDULES SUMMARIZE THE RESULTS OF THE ACOS?

A. Schedule G-1 shows the cost of service summary at present rates and class return by customer class. It also shows the index of return by class which compares the class return against the system return. Similarly, Schedule G-2 shows the cost of service summary, class return, and index of return at proposed rates.

Q. DID YOU COMPARE THE RESULTS OF THE COST OF SERVICE STUDY WITH REVENUES UNDER PRESENT AND PROPOSED RATES BY CLASS?

A. Yes, Schedule G-8 compares the result of the cost of service study at equalized rates of return to the revenues under present and proposed rates. Schedule G-9 shows the cost of service by function allocated to each customer classification.

Q. HOW DID YOU USE RESULTS OF THE ACOS TO DESIGN RATES?

A. I used the ACOS results as a guide to design the rates to recover the Company's revenue requirement. As described in the Rate Design section below, there are several factors that one needs to consider while designing the rates including fairness, efficiency, stability, and gradualism.

IV. PROPOSED RATE DESIGN

Q. ARE THERE GENERAL RATE DESIGN PRINCIPLES THAT ARE ACCEPTED BY THE UTILITY INDUSTRY, INCLUDING THE WATER INDUSTRY?

A. Yes. As a general matter, utility rate analysts have followed the eight general rate design criteria proposed by Dr. James C. Bonbright in his book "Principles of Public Utility Rates", first published in 1961.[2] The principles laid out in his book, and summarized in Mr. Loquvam's testimony, have remained viable for more than five decades now and are still relevant.

Q. PLEASE BRIEFLY DESCRIBE THE GENERAL RATE DESIGN CRITERIA PROPOSED BY DR. BONBRIGHT.

A. The rate structure should be simple to understand and should be free from controversies regarding interpretation. The rates should be such that it results in the recovery of the total revenue requirement under the "fair return" standard. The rates should also result in stable revenue for the company year over year. There should be continuity in rates such that changes to the rate structure are not abrupt and unexpected. The rates should be fair so that each customer class pays its total cost of serving that class. The rates should promote efficiency by encouraging justified use while also discouraging wasteful use.

Q. ARE THE CRITERIA PROPOSED BY DR. BONBRIGHT CONSISTENT WITH EACH OTHER?

A. No, they are not required to be. For example, designing rates strictly based on cost of serving a particular class could conflict with the goal of achieving rate stability and

[2] Bonbright, James C. (1961). *Principles of Public Utility Rates*, New York: Columbia University Press.

gradualism. Therefore, it is important to note that cost causation is only one of many equally-important rate design principles. It is an important guide to be used when developing rates, but it is not intended to be the only factor to be considered while designing rates.

Q. DID YOU FOLLOW THESE PRINCIPLES IN THE PROPOSED REVENUE ALLOCATION AND RATE DESIGN?

A. Yes. I generally followed these criteria in the proposed revenue allocation and rate design. However, as mentioned earlier, some of these criteria conflict with one another and so any proposal will not be able to meet every single criteria. However, I placed more weight on the three criteria that Dr. Bonbright considered to be the primary criteria - the revenue recovery criteria; fairness of rates to customer class criteria; and the efficiency criteria.[3]

Q. DOES THE ARIZONA CORPORATION COMMISSION ("ACC") GIVE CONSIDERATION TO THE THREE CRITERIA DR. BONBRIGHT CONSIDERED TO BE THE PRIMARY CRITERIA?

A. Yes, in its Decision No. 75626 (issued July 25, 2017), the ACC acknowledges that the water rate design must balance the three criteria Dr. Bonbright considered to be the primary criteria. The ACC states that "*w**ater rate design must balance the three (competing) objectives of promoting conservation, customer fairness and allowing a meaningful opportunity for the utility to recover its authorized revenue**.*"[4]

Q. HOW DID YOU DETERMINE THE PROPOSED REVENUE RESPONSIBILITY FOR EACH CLASS?

[3] Bonbright, James C. (1961). *Principles of Public Utility Rates*, New York: Columbia University Press, p. 292.
[4] ACC, Decision No. 75626, *Arizona Corporation Commission Investigation into Potential Improvements to its Water Policies*, issued July 25, 2016, p. 11.

A. The proposed revenue responsibility for each class was guided by the results of the cost of service study as well as the guiding rate design principles discussed above. The primary goal was to bring each class closer to their true cost of service while recognizing that any changes to a particular class should be gradual. The Company also provided me guidance regarding rate design. Through consultation and collaboration with Company personnel, it was decided to limit the increase to any particular class to within one and half times the overall system increase. Additionally, no class would receive a rate reduction. Please note that these limits apply to a particular class as an entirety, with the understanding that individual customers within that class may fall outside of these thresholds. I also considered the existing rate relationship between the various customer classes while determining the revenue responsibility and designing the rates. For example, the base charge associated with a particular meter size is the same for both the residential and commercial classes. Similarly, the volumetric charges also exhibit a relationship between different customer classes.

Q. HOW DID YOU CALCULATE THE PROPOSED RATES FOR EACH CLASS?

A. The proposed rates were designed to collect the allocated revenue requirement from each class, while also closely considering the bill impacts on various customers within that class.

Schedule H-3 shows the proposed rates by rate schedule. This schedule also presents the change in the basic service charge as well as the volumetric charge under proposed rates as compared to the present rates. This schedule shows any changes to the existing tier structure for each rate schedule. Schedule H-3 also lists existing service line and meter installation charges as well as other miscellaneous service fees and any proposed

changes to them. Company witness Mr. Andrew D. Brown discusses these proposed changes in his Direct Testimony.

Schedule H-4 shows the typical bill analysis for each rate schedule. This schedule presents the typical bills under present and proposed rates at different consumption levels for each rate schedule. The changes to a typical bill is presented both in dollar and percentage terms.

Q. DID YOU COMPARE THE TOTAL REVENUES COLLECTED UNDER PRESENT AND PROPOSED RATES?

A. Schedule H-1 shows the revenues under present and proposed rates using the test year billing determinants. This schedule also shows the annualized and weather normalized revenues under present rates. The revenues under proposed rates also include an adjustment for weather normalization that I am sponsoring, as discussed later in this testimony.

Q. DID YOU COMPARE THE TOTAL REVENUES COLLECTED UNDER PRESENT AND PROPOSED RATES BY RATE SCHEDULE AND THE CHANGES IN REVENUES?

A. Yes, Schedule H-2 compares the revenues collected from each rate schedule under present rates, annualized present rates and proposed rates. This schedule also presents the total increase in revenues, both in dollar amount and percentage terms, under proposed rates.

Q. PLEASE DESCRIBE THE PROPOSED RATE STRUCTURE FOR ALL DISTRICTS ON A STAND-ALONE BASIS.

A. All districts were moved to a maximum of three-tiers on a stand-alone basis with the exception of Paradise Valley[5], consistent with Commission's guidance in its Decision No. 75626. In addition, the three-tiered inclining block rates were designed (to the extent feasible) to meet the Commission's *Specific Policy on Implementation of Three Tiered Inclining Block Rates*, which suggests that the basic service charge and first tier volumetric rates together recover at least 50% of the total revenue requirement and the third tier recover no more than 20% and no less than 10% of the total revenue requirement. Please note that, due to customer usage patterns, these specific guidelines were not always met for all districts.

V. CONSOLIDATED SCENARIOS

Q. PLEASE BRIEFLY DESCRIBE THE CONCEPT OF RATE CONSOLIDATION.

A. Rate consolidation is the process of combining all or some of the current 11 districts such that it results in condensing of the number of tariffs or rate classes within the Company's service territories. Such consolidation may be partial, meaning two or more existing districts are consolidated, resulting in fewer, larger districts post-consolidation, or full consolidation resulting in a single set of rates applicable to all EWAZ water customers post-consolidation. As discussed below, rate consolidation leads to several benefits for the customers as well as the Company.

Q. WHAT ARE THE PRIMARY BENEFITS OF RATE CONSOLIDATION?

A. A properly designed rate consolidation will be beneficial to the customers as well as the Company. The primary benefits associated with rate consolidation are:

[5] Paradise Valley is unique in terms of customer usage patterns as compared to the rest of the districts. For example, the average monthly consumption for a 5/8" residential customer in Paradise Valley is about 17 kGals, while the range for the remaining ten districts is from about 3 kGals to 8 kGals. Similarly, the average monthly consumption for a 1" commercial customer in Paradise Valley is about 216 kGals, while the range for the remaining ten districts is from about 12 kGals to 151 kGals.

- Simplified billing and administrative functions for the utility, which will lead to efficiency gains and ultimately benefit the customers in the form of lower revenue requirement and lower rates;

- Rate consolidation can also lead to optimized capital investment whereby the system planning considerations are for a larger system comprising multiple districts instead of numerous small districts. This will be particularly important for smaller districts like Havasu, North Mohave, Tubac and Willow Valley, where capital improvement decisions and the attendant service quality consequences are weighed against whether the customer base can sustain the resulting costs.

- Since water companies are very capital intensive and these capital investments are lumpy in nature, rate consolidation can mitigate the resulting rate impacts associated with the capital investments by allowing the revenue requirement to be spread over a larger customer base. This is particularly beneficial for smaller districts, where the rate impact can be very significant;

- A simplified and consistent rate structure resulting from rate consolidation will also help in achieving specific policy goals set by the Company or by the ACC. For example, conservation goals are much easier to implement when many districts have the same rate structure than when each district has unique rates and rate structure (different basic charges, different number of tiers, different tier blocks, etc.);

Company witness Mr. Thomas Loquvam discusses consolidation in detail.

Q. WHAT RATE CONSOLIDATION IS THE COMPANY PROPOSING?

A. As discussed in the testimony of Company witness, Mr. Loquvam, even though the Company's preference is to ultimately achieve full consolidation of all districts, the Company is not advocating for any specific rate consolidation in this case. Instead the Company is presenting four consolidation scenarios with a goal of facilitating conversation amongst stakeholders regarding (i) how consolidation might be appropriate; and (ii) whether any degree of consolidation can be implemented in a way that mitigates or even fully addresses the concerns of some customers with consolidation.

Q. PLEASE DESCRIBE THE VARIOUS CONSOLIDATION SCENARIOS CONSIDERED BY THE COMPANY.

A. The Company has evaluated several different potential rate consolidations, including full consolidation. Mr. Loquvam discusses the rationale behind each of the consolidation scenarios considered in detail. For purposes of discussion, the four rate consolidation scenarios presented for consideration are referred to as Scenarios 1, 2, 3 and 4 and are summarized as follows:

Table 1: Rate Consolidation Scenarios

Consolidation Scenario					
1	**Group A**: Agua Fria Anthem Chaparral Havasu Tubac Willow Valley	**Group B**: Mohave North Mohave	Sun City (Stand-Alone	Sun City West (Stand-Alone)	Paradise Valley (Stand-Alone)

Consolidation Scenario					
2	**Group C**: Agua Fria Anthem Chaparral Tubac	**Group B**: Mohave North Mohave	**Group D**: Sun City Sun City West	**Group E**: Havasu Willow Valley	Paradise Valley (Stand-Alone)
3	**Group F**: Agua Fria Anthem Tubac	**Group B**: Mohave North Mohave	Chaparral, Sun City, Sun City West, Paradise Valley, Havasu and Willow Valley remain as separate districts (i.e. Stand-Alone).		
4	**Group G**: Full consolidation.				

To be clear, my assessment analysis focused on the particular groups contained within each consolidation scenario. As illustrated by the above table, the Company's consolidation scenarios are composed of one or more groups. For instance, "Consolidation Scenario 1" is the aggregation of two different groups (Groups "A" and "B"); "Consolidation Scenario 2" is the aggregation of three different groups (Groups "C" "B" and "D"); "Consolidation Scenario 3" is the aggregation of Groups "B" and "F"; and "Consolidation Scenario 4" is really full consolidation – or Group "G".

This is important for one to understand as I describe my analysis in the following responses. My analysis of bill impacts focuses on the bill impacts for each "Group". So when I am talking about the bill impact analysis for "Group B" for example, I am

talking about the bill impacts of consolidating the Mohave Water District with the North Mohave Water District – a group that is part of three of the consolidation scenarios.

Q. IT IS FAIR TO SAY THEN, MR. RIMAL, THAT YOUR ANALYSIS FOCUSES ON THE BILL IMPACTS FOR THE GROUPS THAT MAKE UP EACH CONSOLIDATION SCENARIO, WHILE MR. LOQUVAM FOCUSES ON THE CONSOLIDATION SCENARIOS THEMSELVES WHEN DISCUSSING THE BROADER POLICY CONSIDERATIONS THAT ARE TO BE TAKEN INTO ACCOUNT?

A. Yes, that is an accurate way to state it.

Q. WITH THAT UNDERSTANDING OF HOW YOU APPROACHED YOUR ANALYSIS, WHAT GUIDELINES DID THE COMPANY PROVIDE YOU REGARDING ASSESSING THE GROUPS THAT COMPRISE RATE CONSOLIDATION SCENARIOS?

A. The Company instructed me to consider four specific items while assessing the various rate consolidation scenarios: 1) move each class closer to their cost of service to the extent possible; 2) design rates that are in alignment with Commission's guidance in Decision No. 75626, to the extent feasible; 3) design rates that encourage conservation; and 4) consider gradualism and bill impacts when designing rates.

Q. DID YOU CONDUCT SEPARATE COST OF SERVICE STUDIES FOR EACH OF THE GROUPS IN THE CONSOLIDATION SCENARIOS DISCUSSED ABOVE?

A. Yes, I conducted separate cost of service studies for each of the consolidation scenarios discussed above. I am providing the "G" schedules (G-1 through G-9) associated with each of the consolidated groups identified in Table 1 above.

Q. DID YOU ANALYZE THE BILL IMPACTS OF EACH PROPOSED CONSOLIDATED GROUP AS COMPARED TO THE CURRENT RATES FOR THE DISTRICTS WITHIN THOSE GROUPS?

A. Yes, similar to the stand-alone bill impacts, I am providing Schedules H-1, H-2, H-3, and H-4 associated with each of the consolidated groups. Schedule H-4 shows the typical bill analysis for each rate schedule. This schedule presents the typical bills under present and proposed rates at different consumption level for each rate schedule. The changes to a typical bill are presented both in dollar and percentage terms.

Q. DID YOU ALSO COMPARE THE BILL IMPACTS OF EACH PROPOSED CONSOLIDATED GROUP AGAINST THE PROPOSED STAND-ALONE RATES FOR THE DISTRICTS THAT ARE PART OF EACH GROUP?

A. Yes, I compared what typical residential and commercial customers would pay monthly under current rates, proposed stand-alone rates, and proposed consolidated rates. It is necessary to compare what customers would pay under the proposed stand-alone rates versus the proposed consolidated rates. If you just compare the change in bill from current rates to proposed consolidated rates, it does not tell the full story because a portion of the resulting bill impact is due to an increase in the revenue requirement and only a portion is due to consolidation. Comparing bills under proposed stand-alone rates and proposed consolidated group rates helps isolate the bill impacts associated with consolidation. For each of the consolidated groups, I compared the current bill to proposed bill under stand-alone rates as well as consolidated rates for two distinct rate

schedules: 1) 5/8-inch residential customers, and 2) 1-inch commercial customers.[6] Exhibit BR-1 presents the bill impacts for a 5/8-inch residential customer and a 1-inch commercial customer under proposed stand-alone rates as well as the various consolidated groups. I am assuming that a 5/8-inch residential customer uses 7,000 gallons of water per month and a 1-inch commercial customer uses 25,000 gallons of water per month for the bill impact analysis.

Q. PLEASE DESCRIBE THE RESULTS OF YOUR BILL IMPACTS ANALYSIS FOR 5/8-INCH RESIDENTIAL AND 1-INCH COMMERCIAL CUSTOMERS ASSOCIATED WITH CONSOLIDATED GROUP A IDENTIFIED IN TABLE 1 ABOVE.

A. Group A combines Agua Fria, Anthem, Chaparral, Havasu, Tubac, and Willow Valley. Exhibit BR-1, page 1 presents the bill impacts associated with Group A. Consolidation would reduce the bill of a 5/8-inch residential customer for all the smaller districts (*i.e.* Anthem, Chaparral, Havasu, Tubac, and Willow Valley) and increase it for Agua Fria. The monthly bill decreases by about $31, $3, $15, $18, and $71 for Anthem, Chaparral, Havasu, Tubac, and Willow Valley, respectively. The bill increases by about $6 for Agua Fria. As described by Mr. Loquvam in his Direct Testimony, the resulting increase for Agua Fria, could be mitigated through a phased implementation. For 1-inch commercial customers, the bill would be reduced for all the districts, with the smallest reduction for Agua Fria. The monthly bill decreases by about $1, $172, $7, $97, $75, and $398 for Agua Fria, Anthem, Chaparral, Havasu, Tubac, and Willow Valley, respectively.

[6] For residential bill impact analysis for Chaparral and Anthem, I am using ¾-inch metered customers instead of 5/8-inch metered customers.

Q. WHAT WERE THE RESULTS OF YOUR BILL IMPACT ANALYSIS FOR GROUP B?

A. Group B combines the interconnected districts of Mohave and North Mohave. As shown in Exhibit BR-1, page 2, consolidation of these two districts does not impact the 5/8-inch customer bill with usage of 7,000 gallons a month significantly. As a matter of fact, Mohave's bill goes up by about 30 cents and North Mohave's bill goes down by about $3. The bill for a 1-inch commercial customer with usage of 25,000 gallons of water a month goes down for both Mohave and North Mohave. The bill will reduce by about $19 for Mohave and by about $28 for North Mohave customers.

Q. WHAT WERE THE RESULTS OF YOUR BILL IMPACT ANALYSIS FOR GROUP C?

A. Group C combines Agua Fria, Anthem, Chaparral, and Tubac and the bill impacts are shown in Exhibit BR-1, page 3. Similar to the bill impact results for Group A, the 5/8-inch residential customers in smaller districts see a bill reduction while Agua Fria sees a slight bill increase. The monthly bill decreases by about $32, $4, and $18 for Anthem, Chaparral, and Tubac, respectively. The bill increases by about $5 for Agua Fria. The impact for 1-inch commercial customer is similar to Group A, where all the districts see a bill reduction. The monthly bill decreases by about $3, $174, $9 and $77 for Agua Fria, Anthem, Chaparral, and Tubac, respectively.

Q. PLEASE DESCRIBE THE RESULTS OF YOUR BILL IMPACT ANALYSIS FOR GROUP D.

A. Group D combines Sun City and Sun City West districts. As shown in Exhibit BR-1, page 4, consolidation of these two districts decreases the monthly bill for the 5/8-inch residential customer in Sun City West by about $5 and increases the bill for a

corresponding Sun City customer by about $4. The bill for a 1-inch commercial customer with usage of 25,000 gallons of water a month goes down for both districts. It goes down by $12 for Sun City customers and $38 for Sun City West customers.

Q. WHAT WERE THE RESULTS OF YOUR BILL IMPACT ANALYSIS FOR GROUP E?

A. Group E combines the two smaller districts of Havasu and Willow Valley that were included in Group A, but not in Group C. The resulting bill impacts are shown in Exhibit BR-1, page 5. Combining these two districts decreases the monthly bill for 5/8-inch residential customers in both districts, Havasu by about $3, and Willow Valley by $60. Similarly, the 1-inch commercial customer's bill in both Havasu and Willow Valley decreases by about $69 and $369, respectively.

Q. PLEASE DESCRIBE THE RESULTS OF YOUR BILL IMPACT ANALYSIS FOR GROUP F.

A. Group F combines the Agua Fria, Anthem, and Tubac water districts by dropping Chaparral from Group C. The bill impact results under Scenario F are almost identical to the bill impact results under Group C. As shown in Exhibit BR-1, page 6, the 5/8-inch residential customers in smaller districts see a bill reduction ($31 and $17 for Anthem and Tubac, respectively), while Agua Fria sees a slight bill increase (about $6). Similarly, the 1-inch commercial customer in smaller districts see a bill reduction ($170 and $73 for Anthem and Tubac, respectively), while Agua Fria customers see a bill increase (about $1).

Q. WHAT WERE THE RESULTS OF YOUR BILL IMPACT ANALYSIS FOR SCENARIO 4/GROUP G (I.E. FULL CONSOLIDATION)?

A. Scenario 4/Group G results in full consolidation, i.e. all 11 districts are combined into one. As expected, full consolidation leads to varying degrees of bill impacts for different districts. For 5/8–inch residential customers, full consolidation leads to bill reductions for Agua Fria, Anthem, Chaparral, Havasu, North Mohave, Tubac, and Willow Valley; and increases for Mohave, Paradise Valley, Sun City, and Sun City West. Full consolidation benefits the smaller districts more by grouping them with larger districts that are generally less expensive due to economies of scale, *i.e.* by being able to spread costs over the larger customer base.

Q. IS THE COMPANY PROPOSING TO PHASE IN RATES FOR ANY OF THE CONSOLIDATED DISTRICTS?

A. No, since the Company is not recommending any specific consolidation scenario, but rather laying out the various consolidation options and scenarios, there is no specific proposal regarding phasing in of rates. However, as noted by Mr. Loquvam in his testimony, a phasing in of rates may be implemented if consolidation leads to significant rate increases for certain districts or rate schedules. It is important to note that certain districts that are already very closely aligned in terms of current rates and structures will be able to integrate without any phase in.

VI. WEATHER NORMALIZATION

Q. ARE YOU PRESENTING AND SUPPORTING WEATHER NORMALIZATION ADJUSTMENTS IN THE DETERMINATION OF EWAZ'S REVENUE REQUIREMENT IN THIS PROCEEDING?

A. Yes, the results of my weather normalization analysis will adjust the actual billing determinants and revenues to match normal weather and are presented in *pro forma* adjustment JPB-IS5 Annualization / Normalization of Revenues.

Q. WHAT ARE YOUR CONCLUSIONS AND RECOMMENDATIONS REGARDING WEATHER NORMALIZATION?

A. Based on my analysis, I conclude that the weather normalization adjustments proposed by the Company are reasonable and recommend that the Commission accept these adjustments. I have established a clear relationship between weather and consumption in the Company's service territories in this case. I have also established that the actual weather during the Test Year was different than normal weather, and as a result, the Test Year billing determinants as well as Test Year revenues need to be adjusted such that they reflect normal weather conditions.

Q. WHAT IS WEATHER NORMALIZATION AND WHY IS IT IMPORTANT?

A. Weather normalization is a common technique applied throughout the utility industry (water as well as electric and natural gas) to adjust volumes and revenues to account for weather that deviates from normal weather as defined by the National Oceanic and Atmospheric Administration ("NOAA").[7] As discussed later in my testimony, the actual weather during the Test Year was warmer and wetter than normal. As a result, without a weather normalization adjustment, the volumes and revenues during the Test Year would be either over-estimated or under-estimated. Weather normalization adjusts the volumes and revenues such that they match normal weather.

Q. PLEASE BRIEFLY DESCRIBE THE METHODOLOGY YOU USED TO CONDUCT THE WEATHER NORMALIZATION ADJUSTMENT.

A. I first established a relationship between weather and water consumption and then used that relationship to determine what the level of consumption would have been in the

[7] NOAA calculates normal weather using 30-year averages of various climatological variables once every ten years. (Please see https://www.ncdc.noaa.gov/data-access/land-based-station-data/land-based-datasets/climate-normals#:~:text=Climate%20Normals,produced%20once%20every%2010%20years.)

Test Year if normal weather conditions prevailed. As mentioned earlier, this approach to weather normalization is routinely implemented by public utilities (water as well as electric and gas) throughout the country. I conducted Ordinary Least Squares ("OLS") regression analysis to establish a relationship between consumption and weather variables while controlling for factors such as seasonality and economic conditions. I will describe the methodology as well as the data compilation process in more detail below.

Q. PLEASE BRIEFLY DESCRIBE THE DATA YOU USED TO CALCULATE THE USAGE PER CUSTOMER.

A. I calculated monthly usage per customer ("UPC") for each customer class for all eleven districts using the monthly consumption and customer counts data provided by the Company from their billing system. I carefully examined the data for completeness and correctness before analyzing the data. The monthly billed consumption and customer data covered the period from January 2010 to December 2019. For certain districts, the data was not available for this entire period, so whatever data was available was used. For example, the Willow Valley Water District was only acquired by the Company in 2016, and as a result, the data prior to the acquisition was not available.

Q. WHAT WEATHER VARIABLES DID YOU USE IN YOUR ANALYSIS?

A. Consistent with the best practices and methodology used by other water utilities, I structured an econometric analysis to understand the relationship between UPC and weather. I used cooling degree days ("CDD") and precipitation as weather-related variables in my analysis. CDD is calculated as the difference between the mean daily temperature and 65 degrees Fahrenheit.

Q. HOW DID YOU OBTAIN THE WEATHER VARIABLES USED IN YOUR ANALYSIS?

A. For each district, I identified the NOAA weather station that was closest to the district and with the most complete weather data of interest. I then obtained the daily weather data for each of these stations, for the time period covered by the analysis. The table below shows the mapping of weather station to each district.

Station Name	District
Litchfield Park, AZ	Agua Fria
	Sun City
	Sun City West
Scottsdale Municipal Airport, AZ	Anthem
	Chaparral
	Paradise Valley
Laughlin, NV	Havasu
	Mohave
	North Mohave
	Willow Valley
Tumacacori NM, AZ	Tubac

Using the daily weather data obtained from NOAA's National Centers for Environmental Information ("NCEI"), I calculated the monthly actual CDDs and precipitation for each weather station. Similarly, I also calculated the monthly normal CDDs and precipitation for each weather station using the NOAA data.[8]

Q. DID YOU MAKE ANY ADJUSTMENTS TO THE MONTHLY CDD AND PRECIPITATION CALCULATIONS DERIVED USING THE NOAA DATA?

A. Yes. Since the monthly consumption and UPC were not based on a calendar month, but rather on the billed month basis, it was necessary to adjust the CDDs and precipitation

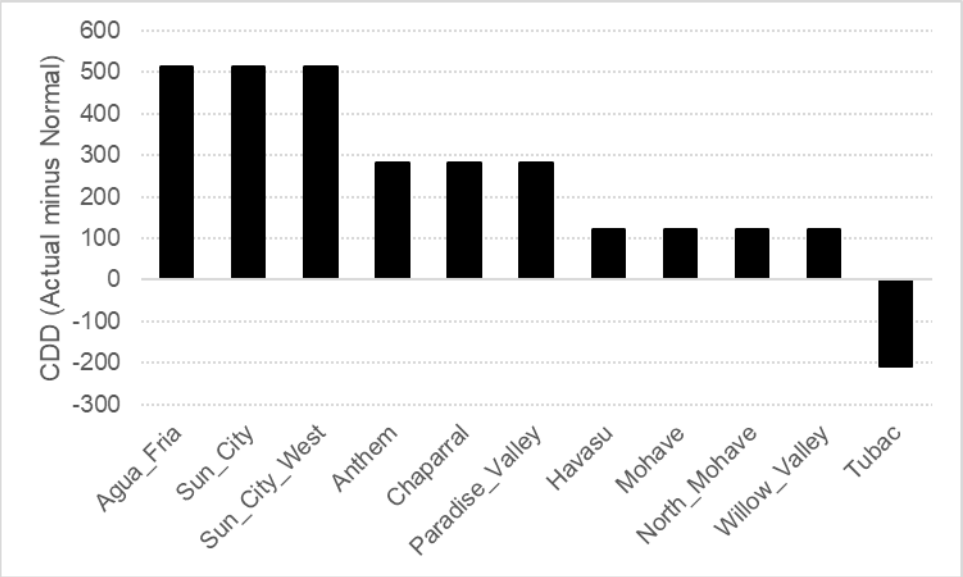
[8] NOAA calculates normal weather using 30-year averages of various climatological variables once every ten years. The normal weather variables used in my analysis are based on data from 1981 to 2010 and is the latest data released by NOAA.

such that it matched the same time period covered by consumption and UPC. It is common operating practice for water, as well as gas and electric, distribution companies, to divide their customers into groups, or billing cycles, and to read their meters and process their bills in different billing cycles through the distribution company's billing procedures in succeeding business days throughout the month. Dividing the customers into billing cycles allows distribution companies to make the most efficient use of their meter reading and billing systems.

I obtained the billing cycle information for each district from the Company and adjusted the weather variable calculations to match the billed consumption and UPC for each district. The Company uses a total of sixteen billing cycles to read the meters and to bill their customers. Different districts are on different cycles and depending on the number of the total customers served, different districts have different numbers of billing cycles. The larger districts have more billing cycles than the smaller ones. For example, the Agua Fria district has 11 meter reading and billing cycles, whereas the North Mohave district has only one meter reading and billing cycle.

Q. PLEASE DESCRIBE THE WEATHER CONDITIONS EXPERIENCED DURING THE TEST YEAR AS COMPARED TO THE NORMAL YEAR.

A, The Test Year was warmer than normal on average based on the comparison of CDDs, except for the Tubac district. The graph below shows the difference between actual and normal billing cycle adjusted CDDs for the Test Year for each district.



The billing cycle adjusted actual CDDs were much higher in April, May, August, and September than normal for most of the districts. In contrast, the billing cycle adjusted actual CDDs were lower than normal in June and July. However, the larger CDDs in April, May, August, and September overwhelmed the smaller CDDs in June and July.

Based on the comparison of actual versus normal precipitation, the Test Year was wetter than normal for all districts, except for Anthem, Chaparral, and Paradise Valley.

Exhibit BR-2 shows the difference between actual CDD and normal CDD for each month of 2019 for each district. This exhibit also shows the difference between actual and normal precipitation for each month of 2019 for each district. As shown in the exhibit, 2019 was warmer than normal on average based on the comparison of CDDs, except for the Tubac district.

All else being equal, one would expect that, based on the comparison of actual CDDs to normal CDDs, the actual water delivered and revenues collected in the Test Year to be higher than if normal weather had prevailed. But, one would expect that based on the

comparison of precipitation, the actual water delivered and revenues collected to be lower than if normal weather had prevailed – the opposite conclusion drawn from the comparison of CDDs. However, as I discuss later in my testimony, precipitation did not always have an impact on water consumption for all customer classes and districts.

Q. HOW DID YOU ANALYZE THE RELATIONSHIP BETWEEN CONSUMPTION AND WEATHER BASED ON VARIABLES INCLUDING CDD AND PRECIPITATION?

A. As mentioned earlier, consistent with the best practices and methodology used by other water utilities, I structured an econometric analysis to understand the relationship between UPC and weather. I conducted OLS regression analysis to determine the relationship between consumption and weather. I developed regression models with UPC as a dependent variable and weather variables (CDD and precipitation) as independent variables, while controlling for other factors (for example, seasonality and economic conditions). I developed regression UPC models for the residential and commercial classes. The regression models for each district are provided as Exhibit BR-3.

As shown in Exhibit BR-3, I have not included precipitation as an independent variable in all of my models. For example, the regression model for commercial customers in the Havasu district does not include precipitation as the dependent variable. This is because including precipitation in the model did not improve the overall fit of the regression model, as measured by the adjusted R-squared of the regression output.[9]

[9] R-squared, or "multiple coefficient of determination", gives the proportion of the total variation in the dependent variable (in this case UPC) that is explained by the independent variables (CDD and precipitation) An R-squared of 65% indicates that the independent variables explain 65% of the variation in the dependent variable.

Q. HOW DID YOU GROUP THE VARIOUS CUSTOMER CLASSES IN YOUR ANALYSIS?

A. I conducted regression analysis on two specific groups in each district- residential and commercial. By focusing on these classes, I have covered 97% of total water sold by the Company.

Q. HOW DID YOU ESTABLISH A RELATIONSHIP BETWEEN CONSUMPTION AND WEATHER?

A. I looked at the overall goodness of fit, as measured by the adjusted R-squared of the regression output for each customer class and district. Additionally, I also evaluated the significance of the beta coefficient associated with the weather variables. [10]

Q. HOW DID YOU USE THE RESULTS OF YOUR ANALYSIS TO ADJUST THE VOLUMES IN THE TEST YEAR TO MATCH NORMAL WEATHER FOR EACH DISTRICT?

A. The purpose of the analysis was to find out how much, if any, should the consumption and revenues be adjusted if weather had behaved "normally" in the Test Year. For each customer class in each district, I first calculated the difference between the actual and normal weather for each weather-related variable. This difference was then multiplied by the beta-coefficient based on the regression result associated with that weather variable for each customer class. This resulted in a UPC adjustment associated with weather for each class which was multiplied by the average customer count for the Test Year to calculate the total weather-related usage adjustment. Exhibit BR-4 shows a

[10] The beta coefficient measures the predicted change in the dependent variable for one unit change in the independent variable. In this case, UPC being the dependent variable and weather variables (CDD and precipitation) being the independent variables.

sample calculation showing how the weather normalization billing adjustment was calculated for the Agua Fria district.

Q. HOW DID YOU CALCULATE THE WEATHER-RELATED REVENUE ADJUSTMENTS FOR EACH DISTRICT?

A. Once I determined the weather-related volume adjustment for each class and district, I multiplied that by the weighted average volumetric rate for that class to calculate the total adjustment to current revenues for each class. Similarly, the volume adjustment was multiplied by the weighted average proposed volumetric rate to calculate the total adjustment to proposed revenues for each class. The weather-related revenue adjustments for each district are shown in Exhibit BR-5.

Q. DID YOU MAKE WEATHER-RELATED ADJUSTMENTS TO VOLUMES AND REVENUES FOR ALL DISTRICTS?

A. No, for the Tubac district, both residential and commercial classes did not show a strong relationship between weather and consumption, and, as a result, I have not made any weather-related adjustments for that district. All other districts showed a strong relationship between weather and consumption.

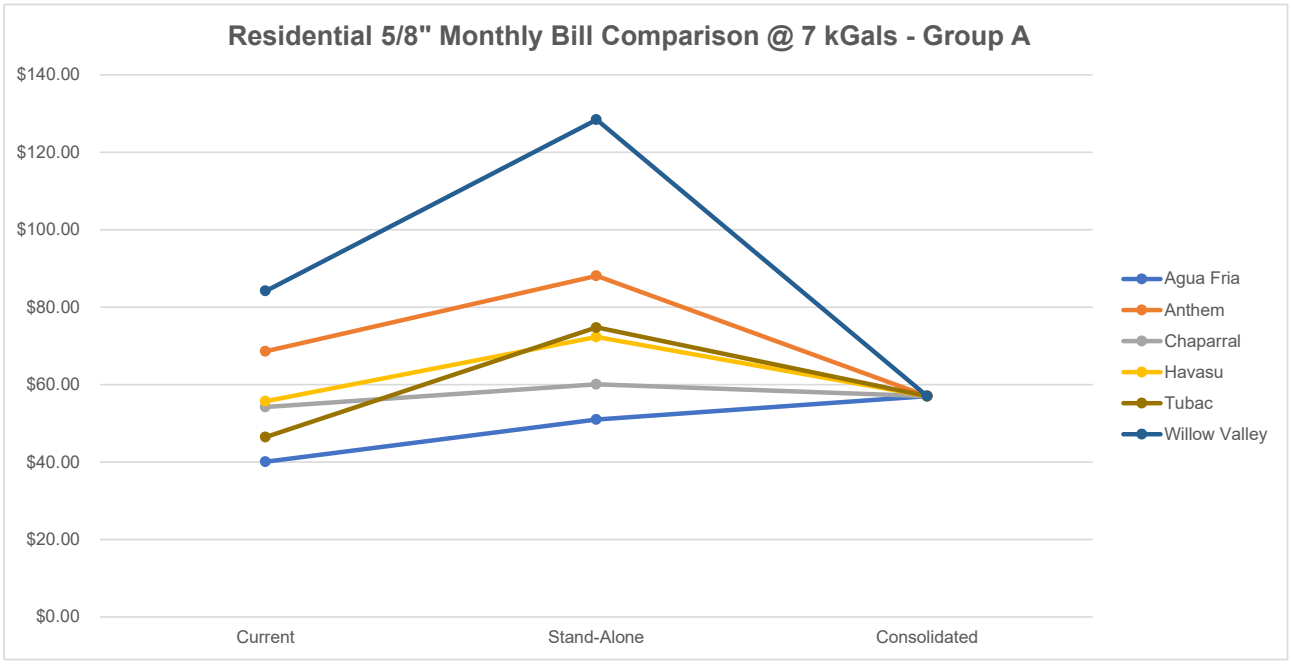
Q. WHAT IS YOUR RECOMMENDATION TO THE COMMISSION REGARDING WEATHER NORMALIZATION?

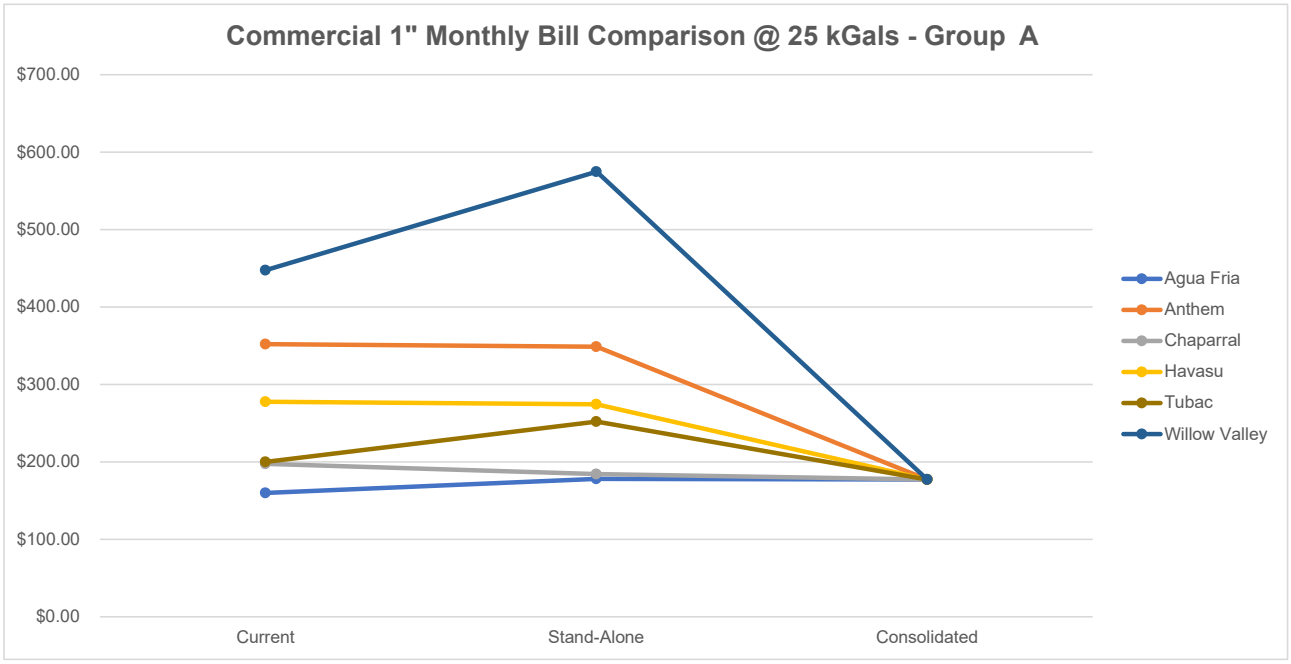
A. I recommend that the Commission find the weather normalization adjustments proposed by the Company to be reasonable and accept these adjustments. I have established a clear relationship between weather and consumption and also established that the actual weather during the Test Year was different than normal weather. As a result, the Test Year billing determinants as well as Test Year revenues need to be adjusted such that they reflect normal weather conditions.

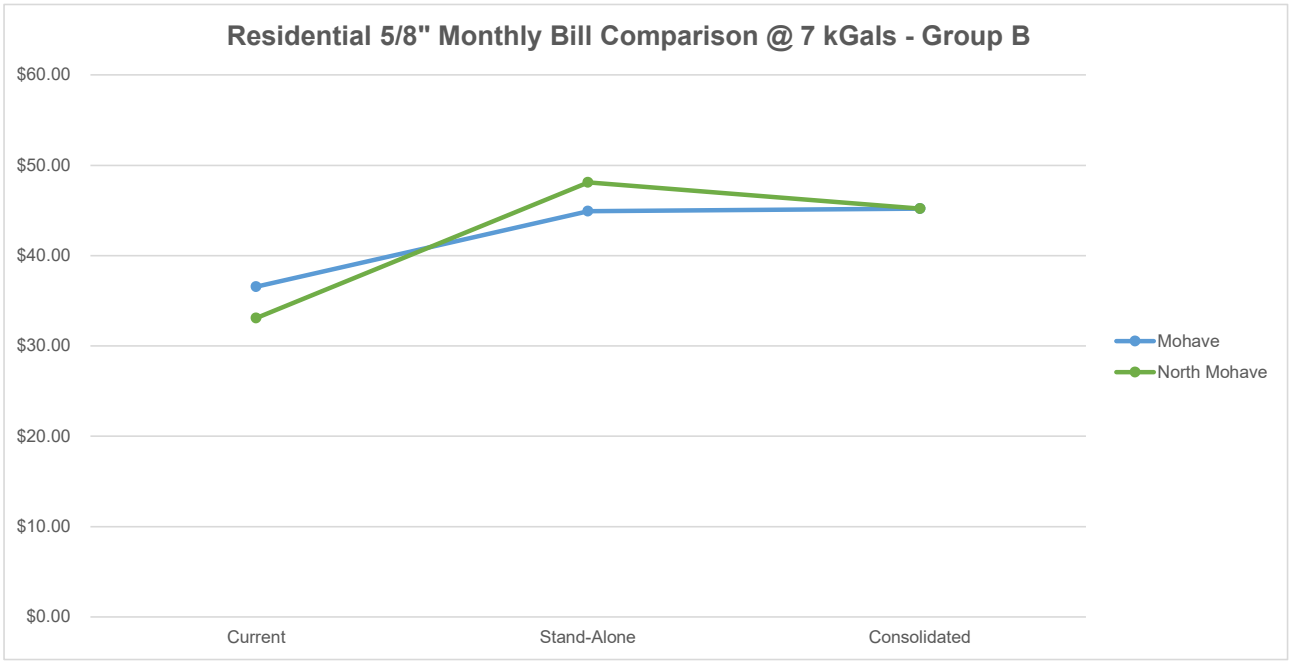
Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

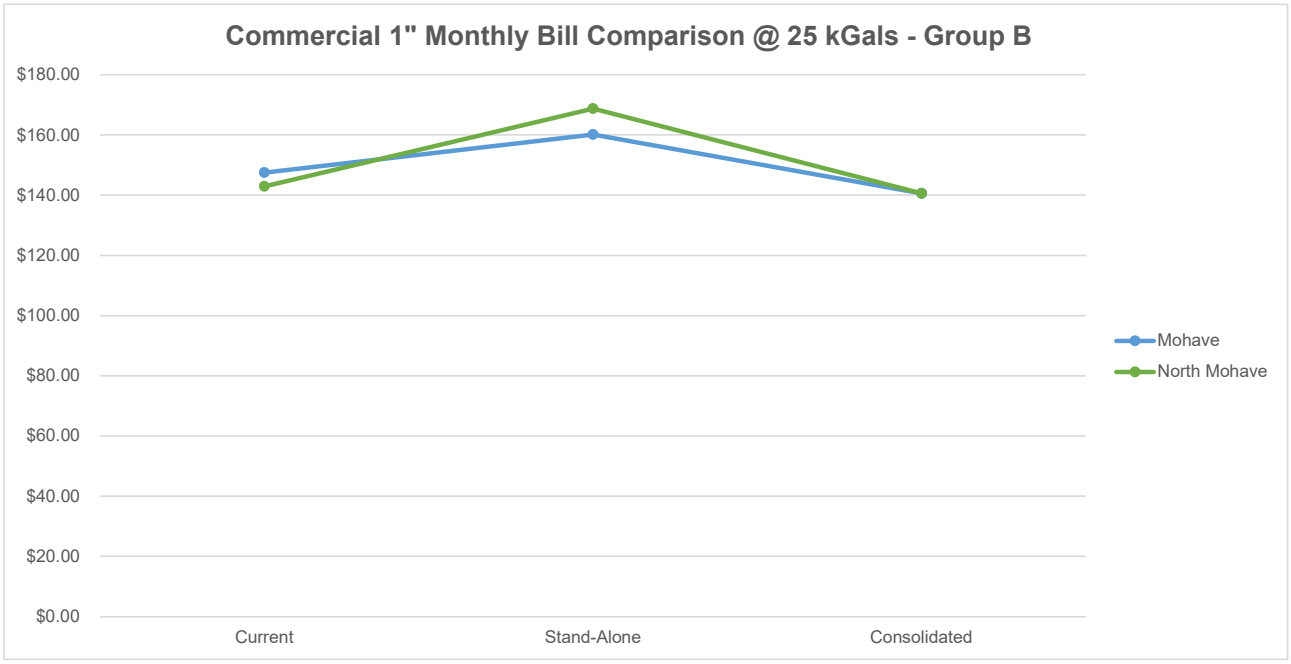
A. Yes.

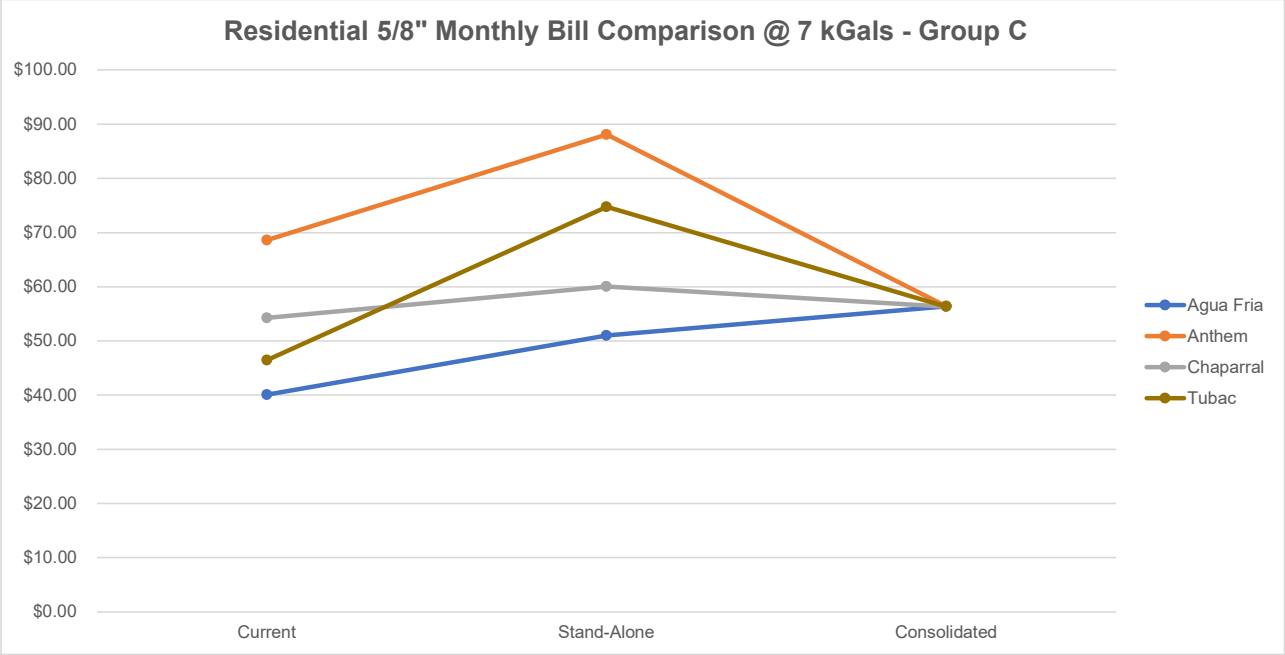
EXHIBIT BR-1

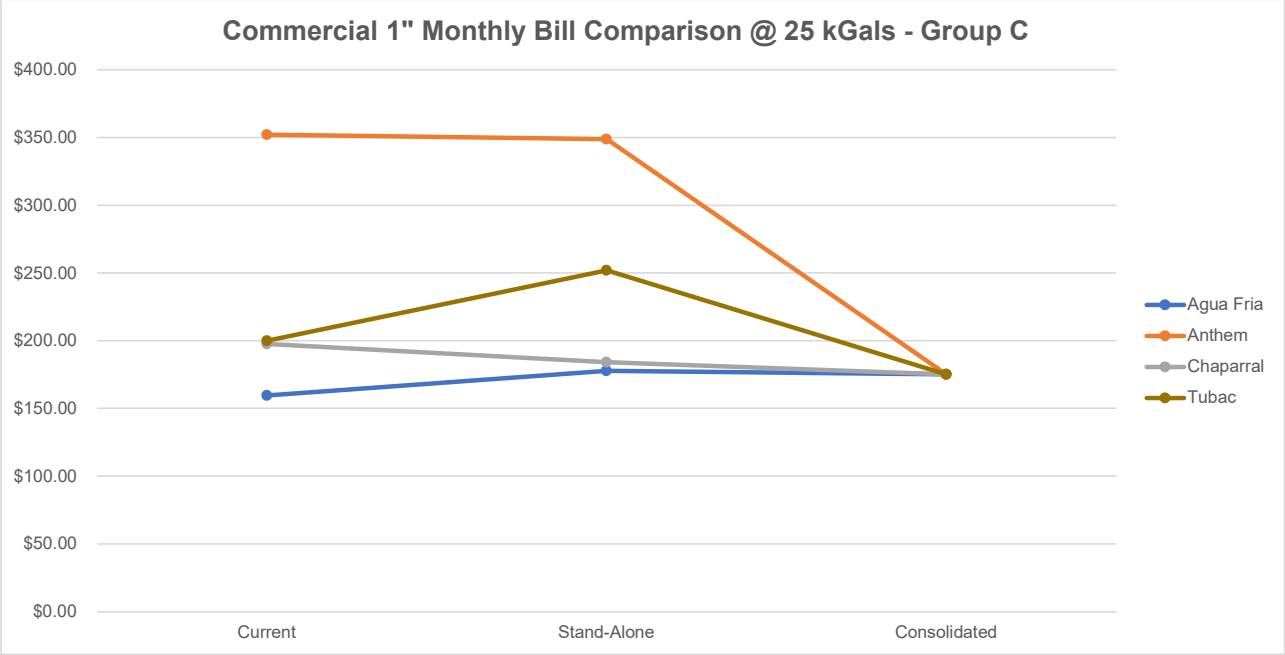

Residential 5/8" Monthly Bill Comparison @ 7 kGals - Group A
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
Current
Stand-Alone
Consolidated
Agua Fria
Anthem
Chaparral
Havasu
Tubac
Willow Valley

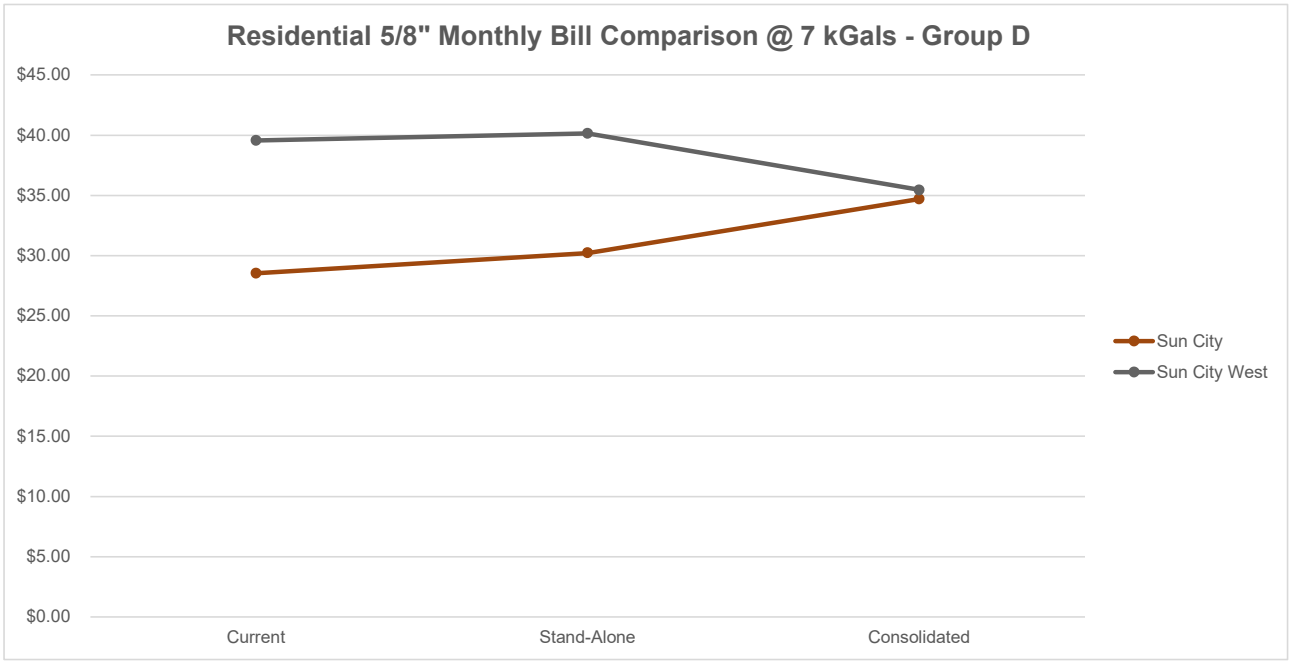

Commercial 1" Monthly Bill Comparison @ 25 kGals - Group A
$700.00
$600.00
$500.00
$400.00
$300.00
$200.00
$100.00
$0.00
Current
Stand-Alone
Consolidated
Agua Fria
Anthem
Chaparral
Havasu
Tubac
Willow Valley


Residential 5/8" Monthly Bill Comparison @ 7 kGals - Group B
$60.00
$50.00
$40.00
$30.00
$20.00
$10.00
$0.00
Current
Stand-Alone
Consolidated
Mohave
North Mohave


Commercial 1" Monthly Bill Comparison @ 25 kGals - Group B
$180.00
$160.00
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
Current
Stand-Alone
Consolidated
Mohave
North Mohave


Residential 5/8" Monthly Bill Comparison @ 7 kGals - Group C
$100.00
$90.00
$80.00
$70.00
$60.00
$50.00
$40.00
$30.00
$20.00
$10.00
$0.00
Current
Stand-Alone
Consolidated
Agua Fria
Anthem
Chaparral
Tubac


Commercial 1" Monthly Bill Comparison @ 25 kGals - Group C
$400.00
$350.00
$300.00
$250.00
$200.00
$150.00
$100.00
$50.00
$0.00
Current
Stand-Alone
Consolidated
Agua Fria
Anthem
Chaparral
Tubac


Residential 5/8" Monthly Bill Comparison @ 7 kGals - Group D
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$40.00
$35.00
$30.00
$25.00
$20.00
$15.00
$10.00
$5.00
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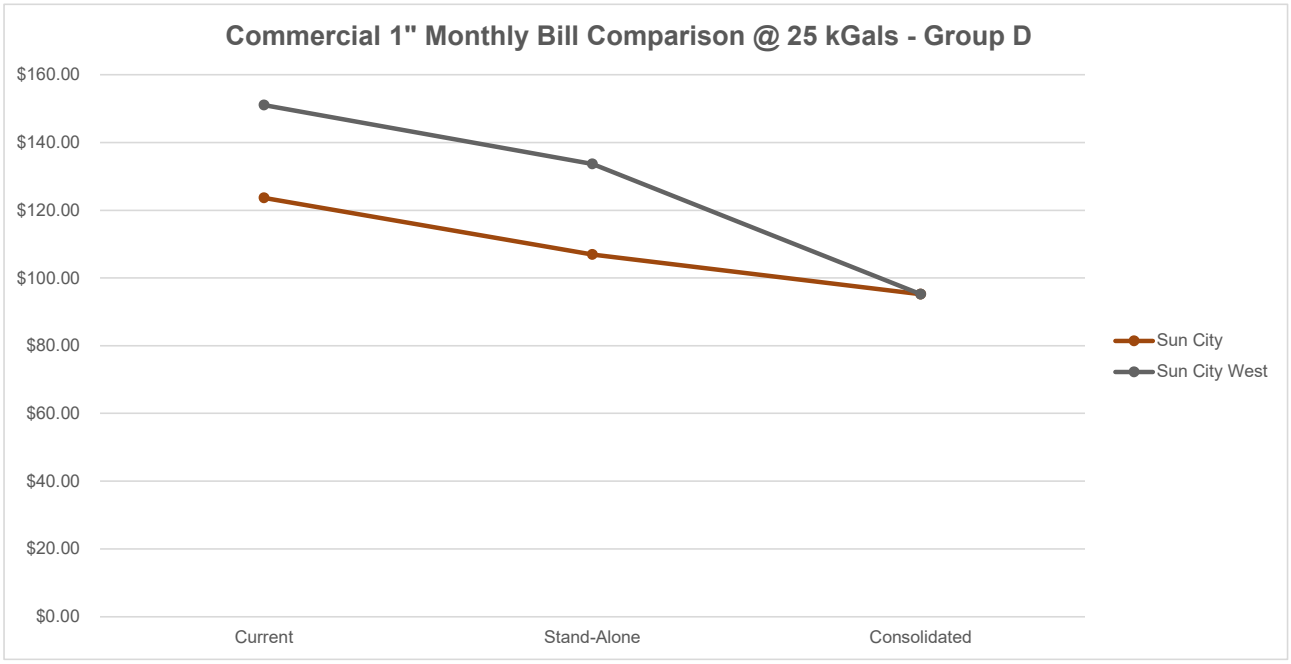
Current
Stand-Alone
Consolidated
Sun City
Sun City West


Commercial 1" Monthly Bill Comparison @ 25 kGals - Group D
$160.00
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
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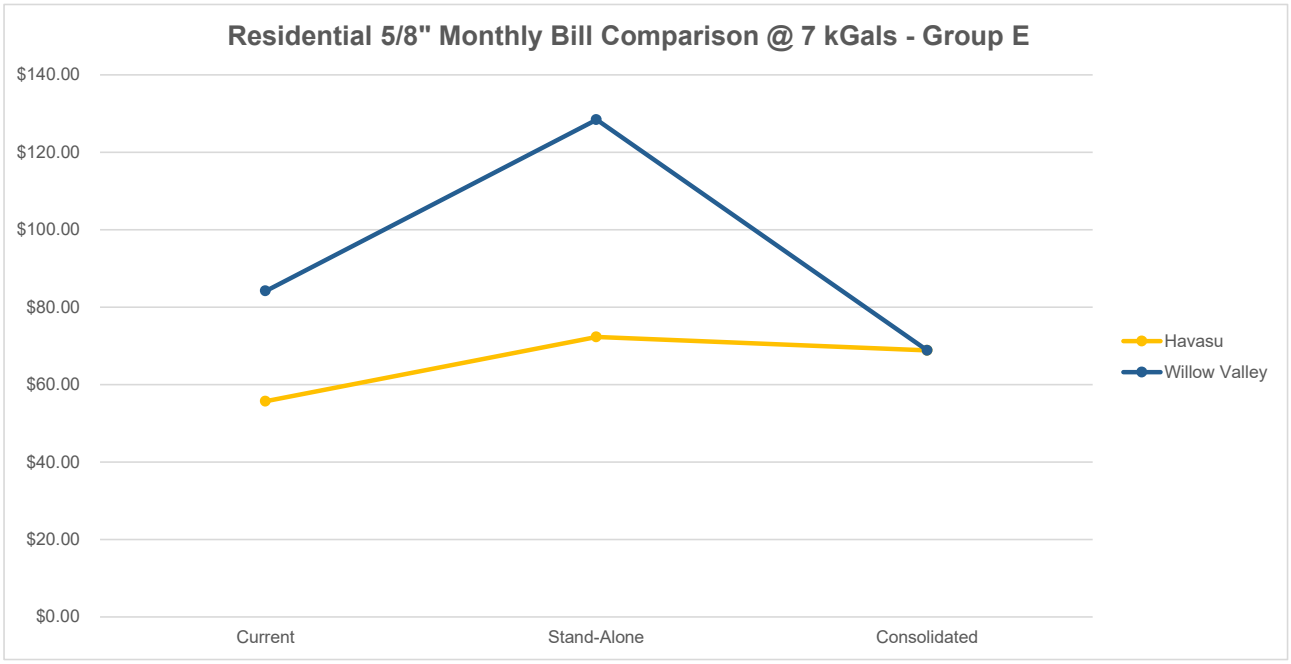
Stand-Alone
Consolidated
Sun City
Sun City West


Residential 5/8" Monthly Bill Comparison @ 7 kGals - Group E
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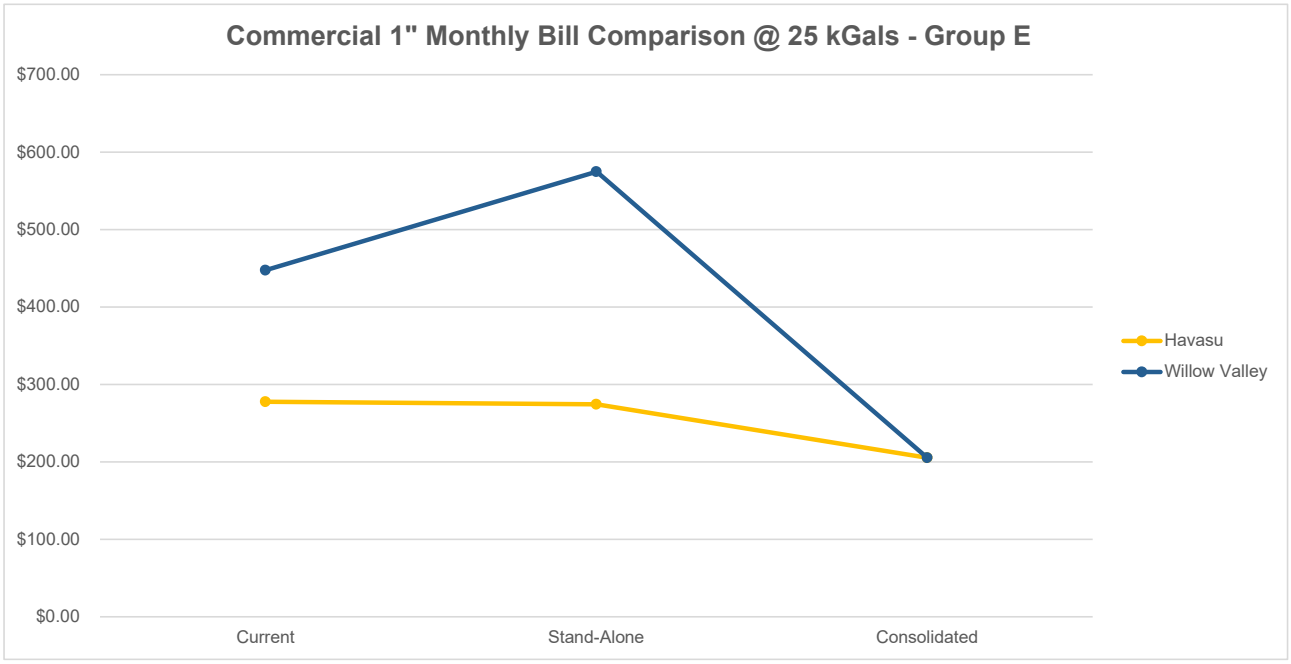
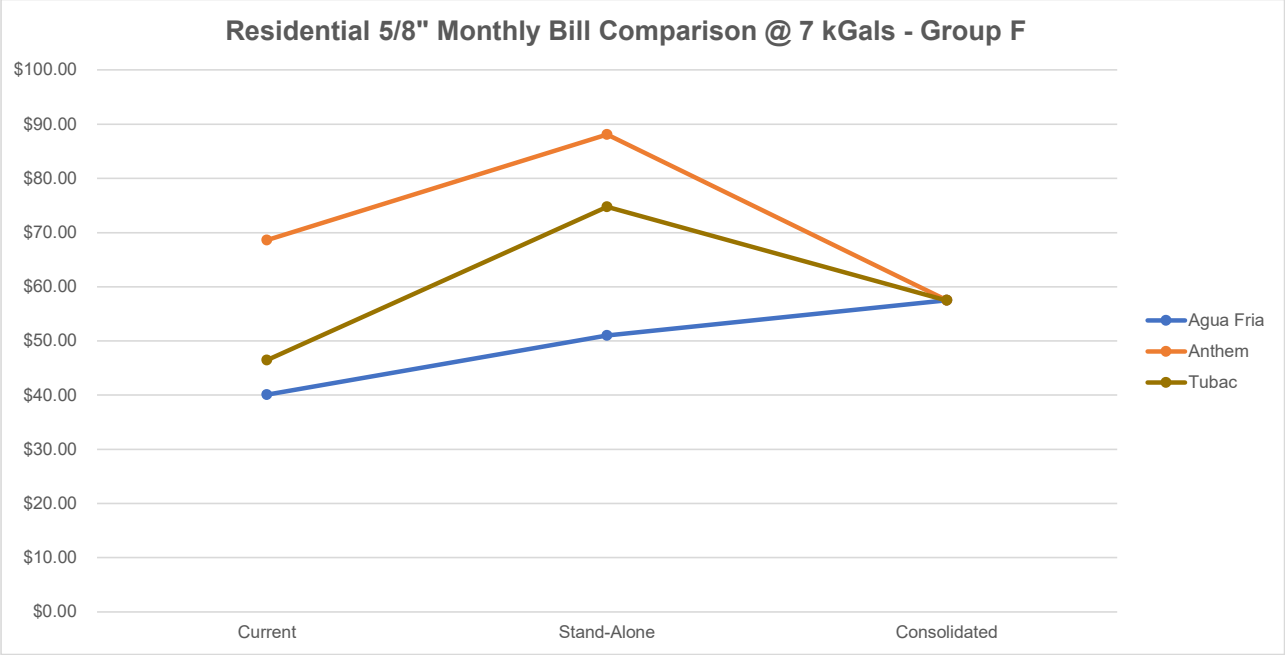
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
Current
Stand-Alone
Consolidated
Havasu
Willow Valley


Commercial 1" Monthly Bill Comparison @ 25 kGals - Group E
$700.00
$600.00
$500.00
$400.00
$300.00
$200.00
$100.00
$0.00
Current
Stand-Alone
Consolidated
Havasu
Willow Valley


Residential 5/8" Monthly Bill Comparison @ 7 kGals - Group F
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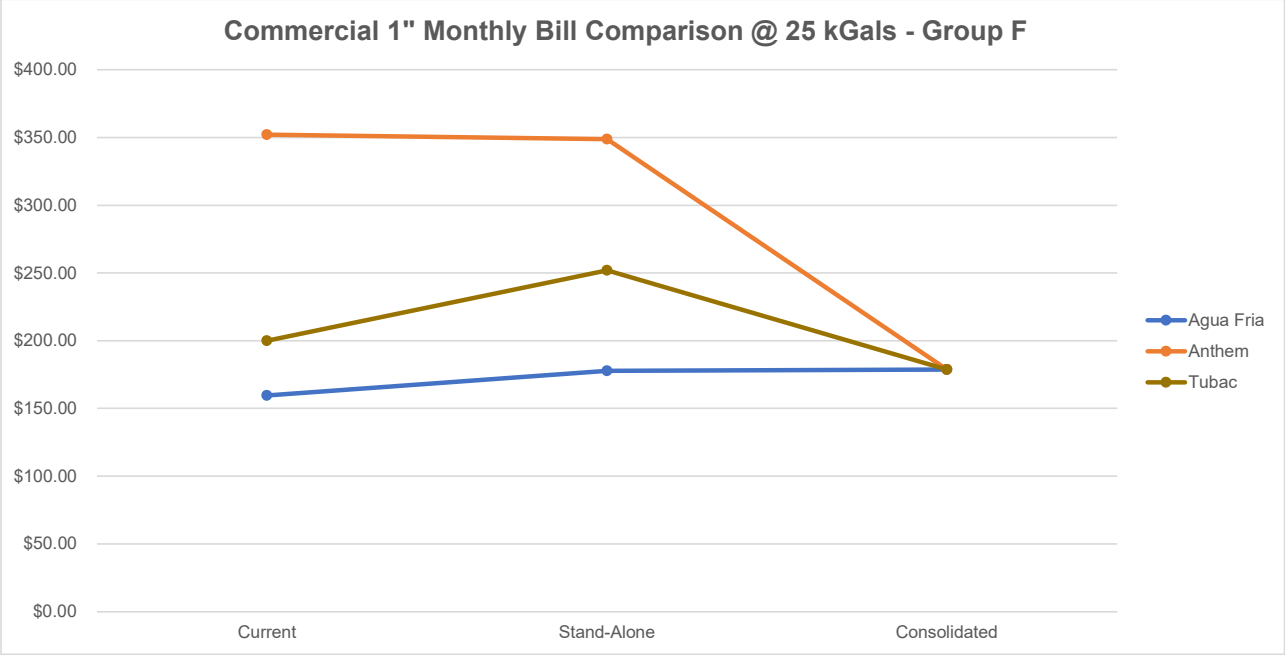
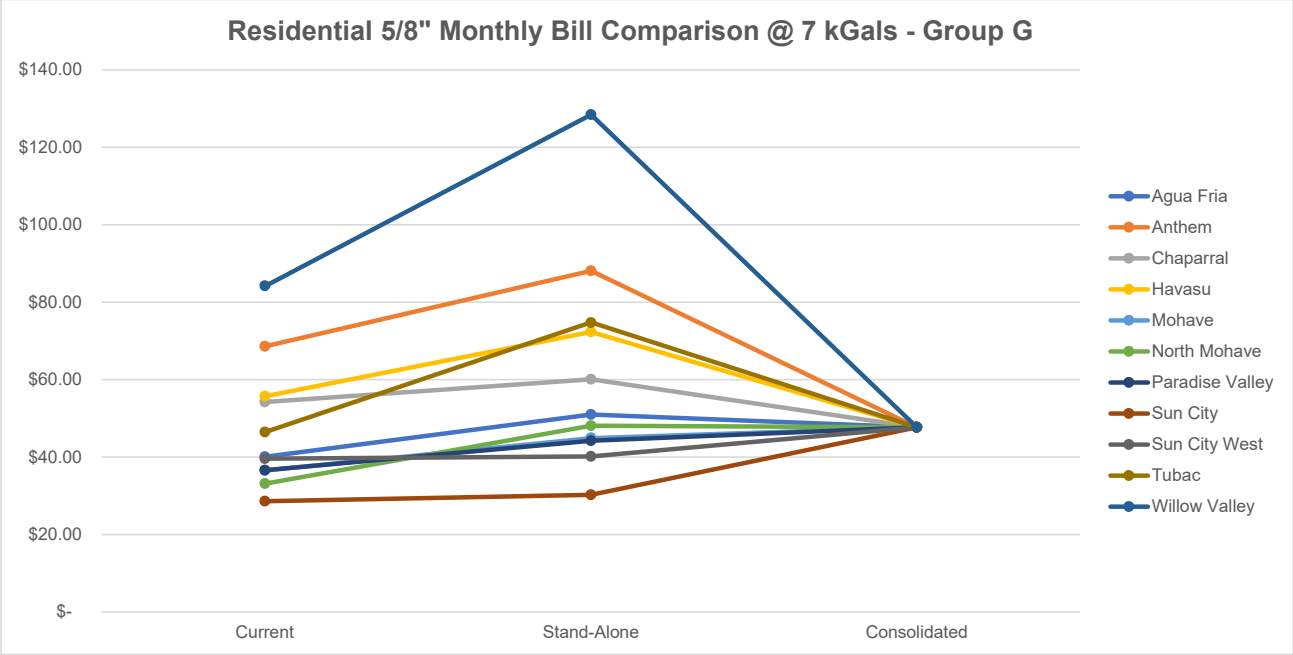
$90.00
$80.00
$70.00
$60.00
$50.00
$40.00
$30.00
$20.00
$10.00
$0.00
Current
Stand-Alone
Consolidated
Agua Fria
Anthem
Tubac


Commercial 1" Monthly Bill Comparison @ 25 kGals - Group F
$400.00
$350.00
$300.00
$250.00
$200.00
$150.00
$100.00
$50.00
$0.00
Current
Stand-Alone
Consolidated
Agua Fria
Anthem
Tubac


Residential 5/8" Monthly Bill Comparison @ 7 kGals - Group G
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$-
Current
Stand-Alone
Consolidated
Agua Fria
Anthem
Chaparral
Havasu
Mohave
North Mohave
Paradise Valley
Sun City
Sun City West
Tubac
Willow Valley

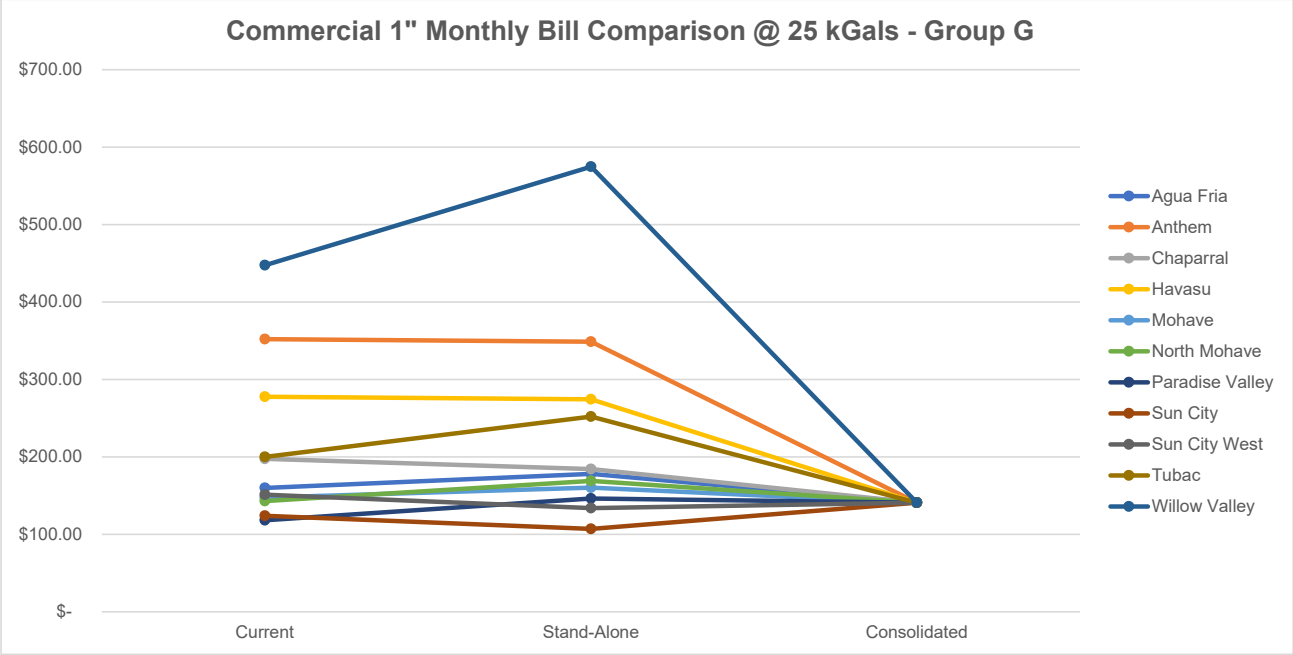

Commercial 1" Monthly Bill Comparison @ 25 kGals - Group G
$700.00
$600.00
$500.00
$400.00
$300.00
$200.00
$100.00
$-
Current
Stand-Alone
Consolidated
Agua Fria
Anthem
Chaparral
Havasu
Mohave
North Mohave
Paradise Valley
Sun City
Sun City West
Tubac
Willow Valley

EXHIBIT BR-2

Actual minus Normal CDD (Billing Cycle Adjusted)

Month	Agua_Fria	Sun_City	Sun_City_West	Anthem	Chaparral	Paradise_Valley	Havasu	Mohave	North_Mohave	Willow_Valley	Tubac
1	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	1	1	1	1	0
3	20	6	13	12	6	1	7	8	1	1	1
4	84	60	84	59	58	49	37	33	18	18	0
5	48	100	54	30	47	68	56	63	88	88	17
6	9	-49	1	-36	-60	-87	-43	-36	-68	-68	-105
7	-14	5	-46	-50	-55	-23	-63	-100	-19	-19	-95
8	155	130	155	142	154	97	45	89	-9	-9	23
9	136	161	169	100	101	152	130	102	157	157	-43
10	0	-6	-7	-46	-48	-58	-83	-95	-49	-49	-9
11	70	56	69	57	45	19	-3	33	-52	-52	5
12	6	51	23	13	33	62	40	24	54	54	0
Total	515	515	515	281	281	281	122	122	122	122	-208

Actual minus Normal Precipitation (Billing Cycle Adjusted)

Month	Agua_Fria	Sun_City	Sun_City_West	Anthem	Chaparral	Paradise_Valley	Havasu	Mohave	North_Mohave	Willow_Valley	Tubac
1	0.8	0.4	0.6	0.8	0.6	0.3	0.7	1.1	0.4	0.4	1.4
2	-0.2	-0.1	-0.3	-0.4	-0.4	-0.3	0.6	0.7	0.9	0.9	-0.9
3	0.9	0.6	0.7	0.7	0.7	0.5	0.3	0.0	0.5	0.5	1.1
4	-0.6	-0.1	-0.1	-0.5	-0.4	-0.1	-0.4	-0.3	-0.4	-0.4	0.2
5	0.1	-0.1	0.1	-0.1	-0.2	-0.3	0.4	0.4	0.4	0.4	-0.3
6	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.1	0.1	0.2	0.2	-0.2
7	-0.4	-0.1	-0.2	-0.3	-0.2	-0.1	-0.1	-0.2	-0.1	-0.1	-1.0
8	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	-0.4	-0.4	-0.5	-0.5	-1.4
9	-0.8	-0.9	-1.0	-0.4	-0.5	-0.5	-0.3	-0.3	-0.1	-0.1	1.7
10	0.3	0.3	0.4	-0.1	0.0	0.0	-0.2	-0.2	-0.3	-0.3	0.4
11	0.3	-0.3	-0.3	-0.5	-0.7	-0.7	-0.2	0.1	-0.2	-0.2	-0.9
12	1.6	2.1	2.4	1.3	1.4	1.3	4.3	3.8	3.5	3.5	3.1
Total	1.4	1.2	1.5	-0.2	-0.4	-0.6	4.8	4.8	4.2	4.2	3.2

EXHIBIT BR-3

Agua Fria - Regression Results

	Commercial	Residential
CDD	0.051***	0.003***
	(0.008)	(0.000)
PRCP	-8.767***	-0.434***
	(1.543)	(0.069)
dJan	-45.653***	-1.073***
	(5.839)	(0.265)
dFeb	-51.075***	-1.600***
	(5.809)	(0.264)
dMar	-47.300***	-1.466***
	(5.666)	(0.259)
dApr	-31.625***	-0.583**
	(5.171)	(0.238)
dMay	-16.212***	-0.512**
	(4.721)	(0.217)
dJun	11.865**	
	(4.850)	
dJul	25.101***	
	(5.685)	
dAug	18.218***	
	(5.441)	
dSep	-27.722***	-0.644**
	(5.819)	(0.264)
UNEMPLOYMENT	-4.854***	
	(0.612)	
Constant	144.550***	8.243***
	(5.745)	(0.191)
Number of Observations	120	120
R^2	0.928	0.896
Adjusted R^2	0.92	0.888
F Statistic	115.704*** (df = 12; 107)	118.944*** (df = 8; 111)

Note: * p<0.1; ** p<0.05; *** p<0.01
Standard Error in parenthesis

Anthem - Regression Results

	Commercial	Residential
CDD	0.040***	0.003***
	(0.005)	(0.000)
PRCP	-4.171***	-0.371***
	(0.855)	(0.096)
dJan	-10.371***	
	(3.206)	
dFeb	-12.855***	-0.735**
	(3.170)	(0.298)
dMar	-14.386***	-0.737**
	(3.149)	(0.299)
dApr	-7.564***	
	(2.836)	
dJun	6.425**	
	(2.593)	
dJul	6.063*	
	(3.119)	
dAug	6.339**	
	(3.014)	
dSep	-7.244**	
	(3.158)	
UNEMPLOYMENT	-1.031***	
	(0.346)	
Constant	58.991***	7.573***
	(3.039)	(0.148)
Number of Observations	120	120
R^2	0.901	0.697
Adjusted R^2	0.891	0.686
F Statistic	89.259*** (df = 11; 108)	66.058*** (df = 4; 115)

Note: * p<0.1; ** p<0.05; *** p<0.01
Standard Error in parenthesis

Chaparral - Regression Results

	Commercial	Residential
CDD	0.011***	0.003***
	(0.001)	(0.000)
PRCP	-0.760*	-0.389***
	(0.387)	(0.080)
dFeb		-0.914***
		(0.248)
dMar	-2.124*	-0.969***
	(1.180)	(0.248)
dMay	-1.897	-0.602**
	(1.165)	(0.237)
dJul	-2.579**	
	(1.139)	
dAug		-0.365
		(0.233)
UNEMPLOYMENT	-1.089	
	(0.732)	
Constant	30.453***	7.913***
	(3.146)	(0.130)
Number of Observations	54	54
R^2	0.768	0.906
Adjusted R^2	0.739	0.894
F Statistic	25.947*** (df = 6; 47)	75.162*** (df = 6; 47)

Note: * p<0.1; ** p<0.05; *** p<0.01
Standard Error in parenthesis

Havasu - Regression Results

	Commercial	Residential
CDD	0.026***	0.003***
	(0.003)	(0.000)
PRCP	-2.366*	
	(1.392)	
d2013	-43.801***	
	(2.123)	
dFeb		-0.483*
		(0.290)
dMar		-0.512*
		(0.289)
dAug		-0.475
		(0.302)
dSep	8.151**	
	(3.818)	
UNEMPLOYMENT		0.102***
		(0.028)
Constant	67.887***	6.339***
	(2.177)	(0.279)
Number of Observations	120	120
R^2	0.806	0.684
Adjusted R^2	0.799	0.67
F Statistic	119.144*** (df = 4; 115)	49.311*** (df = 5; 114)

Note: * p<0.1; ** p<0.05; *** p<0.01
Standard Error in parenthesis

Mohave - Regression Results

	Commercial	Residential
CDD	0.011*** (0.001)	0.003*** (0.000)
dJan	-1.846 (1.149)	
dFeb	-2.508** (1.141)	-0.440* (0.230)
dMar	-3.707*** (1.131)	-0.654*** (0.229)
dMay	-1.64 (1.042)	
UNEMPLOYMENT	0.458*** (0.105)	
Constant	27.767*** (1.076)	6.320*** (0.105)
Number of Observations	120	120
R^2	0.708	0.726
Adjusted R^2	0.693	0.719
F Statistic	45.720*** (df = 6; 113)	102.609*** (df = 3; 116)

Note: * p<0.1; ** p<0.05; *** p<0.01
Standard Error in parenthesis

North Mohave - Regression Results

	Commercial	Residential
CDD	0.025*** (0.003)	0.004*** (0.000)
dFeb		-0.965*** (0.331)
dMar		-1.120*** (0.329)
dApr	9.957*** (3.371)	
dAug	-6.941* (3.678)	-0.495 (0.350)
UNEMPLOYMENT	4.488** (2.147)	-0.169** (0.069)
Constant	4.827 (12.859)	9.839*** (0.494)
Number of Observations	36	72
R^2	0.731	0.849
Adjusted R^2	0.696	0.837
F Statistic	21.029*** (df = 4; 31)	73.975*** (df = 5; 66)

Note: * p<0.1; ** p<0.05; *** p<0.01
Standard Error in parenthesis

Paradise Valley - Regression Results

	Commercial	Residential
CDD	0.102*** (0.013)	0.018*** (0.002)
PRCP	-18.252*** (2.692)	-2.408*** (0.365)
dJan	-58.044*** (10.007)	-10.221*** (1.533)
dFeb	-65.692*** (9.971)	-13.828*** (1.531)
dMar	-59.043*** (9.874)	-14.636*** (1.516)
dApr	-26.514*** (9.127)	-10.122*** (1.403)
dMay		-6.823*** (1.252)
dJun	30.056*** (7.724)	
dJul	26.458*** (8.650)	
dAug	16.914* (8.858)	2.903** (1.156)
dSep	-32.415*** (9.512)	-4.419*** (1.462)
Constant	208.578*** (7.125)	41.183*** (1.206)
Number of Observations	120	120
R^2	0.911	0.943
Adjusted R^2	0.903	0.938
F Statistic	111.961*** (df = 10; 109)	201.394*** (df = 9; 110)

Note: * p<0.1; ** p<0.05; *** p<0.01
Standard Error in parenthesis

Sun City - Regression Results

	Commercial	Residential
CDD	0.036***	0.003***
	(0.002)	(0.001)
PRCP	-1.215*	-0.509***
	(0.664)	(0.121)
dJan	-6.841***	-2.408***
	(2.471)	(0.552)
dFeb	-9.989***	-3.180***
	(2.462)	(0.552)
dMar	-13.431***	-3.398***
	(2.446)	(0.547)
dApr	-5.887**	-2.357***
	(2.341)	(0.497)
dMay	-4.244*	-1.624***
	(2.219)	(0.439)
dJun	3.245	
	(2.118)	
dJul		0.976**
		(0.436)
dAug		0.949**
		(0.451)
dSep		-1.039*
		(0.536)
UNEMPLOYMENT	-0.904***	
	(0.295)	
Constant	66.479***	11.631***
	(2.345)	(0.433)
Number of Observations	120	120
R^2	0.88	0.844
Adjusted R^2	0.871	0.83
F Statistic	89.882*** (df = 9; 110)	58.922*** (df = 10; 109)

Note: * p<0.1; ** p<0.05; *** p<0.01
Standard Error in parenthesis

Sun City West - Regression Results

	Commercial	Residential
CDD	0.025***	0.001***
	(0.002)	(0.000)
PRCP	-1.995***	-0.270***
	(0.550)	(0.065)
dJan	-4.311**	-0.886***
	(2.035)	(0.289)
dFeb	-6.788***	-1.246***
	(2.032)	(0.288)
dMar	-9.195***	-1.404***
	(2.022)	(0.286)
dApr	-2.648	-0.626**
	(1.916)	(0.260)
dMay	-3.395*	-0.692***
	(1.828)	(0.236)
dSep		-0.588**
		(0.285)
UNEMPLOYMENT		-0.044
		(0.030)
Constant	54.309***	8.031***
	(1.266)	(0.279)
Number of Observations	120	120
R^2	0.822	0.737
Adjusted R^2	0.811	0.715
F Statistic	74.033*** (df = 7; 112)	34.248*** (df = 9; 110)

Note: * p<0.1; ** p<0.05; *** p<0.01
Standard Error in parenthesis

Tubac - Regression Results

	Commercial	Residential
CDD	0.008***	0.002
	(0.002)	(0.001)
PRCP	-0.530***	-0.248***
	(0.199)	(0.086)
dJan		-1.087***
		(0.378)
dFeb	-1.811**	-1.390***
	(0.880)	(0.375)
dMar	-1.502*	-1.286***
	(0.881)	(0.376)
dApr	1.706*	0.892**
	(0.887)	(0.374)
dMay	2.360***	1.507***
	(0.884)	(0.372)
dJun	2.110**	2.646***
	(0.875)	(0.368)
dJul	2.369**	3.142***
	(1.027)	(0.440)
dSep	1.266	
	(0.878)	
UNEMPLOYMENT	0.255***	0.300***
	(0.077)	(0.033)
Constant	15.728***	4.589***
	(1.074)	(0.445)
Number of Observations	120	120
R^2	0.554	0.814
Adjusted R^2	0.513	0.797
F Statistic	13.542*** (df = 10; 109)	47.676*** (df = 10; 109)

Note: * p<0.1; ** p<0.05; *** p<0.01
Standard Error in parenthesis

Willow Valley - Regression Results

	Commercial	Residential
CDD	2.499* (1.350)	1.341*** (0.101)
d2018	-7,916.397*** (974.679)	
dMar	-2829.445 (1893.857)	-300.955** (137.171)
dMay	-4,913.724** (1882.696)	
dJun		346.256*** (112.842)
dSep		251.935** (120.277)
UNEMPLOYMENT	-3,413.030*** (1016.927)	
Constant	40,607.590*** (6163.929)	2,243.616*** (61.675)
Number of Observations	43	43
R^2	0.698	0.867
Adjusted R^2	0.657	0.853
F Statistic	17.092*** (df = 5; 37)	62.026*** (df = 4; 38)

Note: * p<0.1; ** p<0.05; *** p<0.01
Standard Error in parenthesis

EXHIBIT BR-4

Agua Fria
Residential

	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Total
Actual Billed CDD	0	0	20	139	352	536	786	926	876	383	154	6	4178
Normal Billed CDD	0	0	0	55	303	528	800	771	739	383	84	0	3663
Actual - Normal	0	0	20	84	48	9	-14	155	136	0	70	6	515
CDD Regression Coefficient	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	
CDD - Weather Adjustment (kGal per Customer)	0.00	0.00	0.06	0.25	0.15	0.03	-0.04	0.46	0.41	0.00	0.21	0.02	2
Actual Billed PRCP	0.8	0.9	2.1	0.1	0.3	0.0	0.0	0.5	0.4	1.0	0.7	2.5	9
Normal Billed PRCP	1.1	1.0	1.1	0.7	0.2	0.1	0.4	1.1	1.2	0.7	0.4	0.9	9
Actual - Normal	0	0	1	-1	0	0	0	-1	-1	0	0	2	0
Regression Coefficient	-0.434	-0.434	-0.434	-0.434	-0.434	-0.434	-0.434	-0.434	-0.434	-0.434	-0.434	-0.434	
Precipitation Weather Adjustment (kGal per Customer)	0.13	0.07	-0.40	0.26	-0.05	0.02	0.18	0.27	0.33	-0.13	-0.13	-0.70	-0.2

Number of Customers	46,823
Total Adjustment (kGal)	-64,798

	Current	Proposed
Weighted average rate ($/kGal)	$4.10	$3.77
Total Adjustment ($)	**-$265,484**	**-$244,457**

Agua Fria
Commercial

	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Total
Actual Billed CDD	0	0	20	139	352	536	786	926	876	383	154	6	4178
Normal Billed CDD	0	0	0	55	303	528	800	771	739	383	84	0	3663
Actual - Normal	0	0	20	84	48	9	-14	155	136	0	70	6	515
CDD Regression Coefficient	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051	0.051	
CDD - Weather Adjustment (kGal per Customer)	0.00	0.00	1.01	4.30	2.47	0.45	-0.72	7.90	6.94	0.01	3.56	0.31	26
Actual Billed PRCP	1	1	2	0	0	0	0	0	0	1	1	3	9
Normal Billed PRCP	1	1	1	1	0	0	0	1	1	1	0	1	9
Actual - Normal	0	0	1	-1	0	0	0	-1	-1	0	0	2	0
Regression Coefficient	-8.767	-8.767	-8.767	-8.767	-8.767	-8.767	-8.767	-8.767	-8.767	-8.767	-8.767	-8.767	
Precipitation Weather Adjustment (kGal per Customer)	2.57	1.46	-8.08	5.27	-1.09	0.36	3.60	5.41	6.70	-2.66	-2.70	-14.07	-3

Number of Customers	1,226
Total Adjustment (kGal)	-28,218

	Current	Proposed
Weighted average rate ($/kGal)	$4.96	$4.37
Total Adjustment ($)	**-$140,052**	**-$123,330**

EXHIBIT BR-5

Weather Normalization Calculations

District	Customer Type	Customer Count	Volumes (kGal)	Current Volumetric Revenue ($)	Current Weighted Volumetric Rate ($/kGal)	Proposed Volumetric Revenue ($)	Proposed Weighted Volumetric Rate ($/kGal)	CDD Coefficient	PRCP Coefficient	**Volume Adjustment (kGals)**	**Revenue Adjustment**	
											Current	**Proposed**
Agua Fria	Residential	46,823	4,957,343	$ 20,310,852	4.10	$ 18,702,191	3.77	0.003	-0.434	**-64,798**	**-$265,484**	**-$244,457**
Agua Fria	Commercial	1,226	1,657,025	$ 8,224,196	4.96	$ 7,242,234	4.37	0.051	-8.767	**-28,218**	**-$140,052**	**-$123,330**
Anthem	Residential	8,810	807,226	$ 3,556,976	4.41	$ 7,049,160	8.73	0.003	-0.371	**-12,546**	**-$55,285**	**-$109,563**
Anthem	Commercial	249	184,770	$ 1,441,602	7.80	$ 1,844,446	9.98	0.04	-4.171	**-4,430**	**-$34,563**	**-$44,221**
Chaparral	Residential	13,000	1,287,269	$ 4,644,533	3.61	$ 6,122,702	4.76	0.003	-0.389	**-19,453**	**-$70,187**	**-$92,525**
Chaparral	Commercial	451	157,815	$ 617,055	3.91	$ 760,929	4.82	0.011	-0.76	**-1,969**	**-$7,697**	**-$9,492**
Havasu	Residential	22,573	176,261	$ 872,474	4.95	$ 1,207,248	6.85	0.003		**-8,231**	**-$40,741**	**-$56,374**
Havasu	Commercial	54	20,554	$ 113,699	5.53	$ 153,654	7.48	0.026	-2.366	**245**	**$1,356**	**$1,832**
Mohave	Residential	15,630	1,209,313	$ 2,722,652	2.25	$ 4,413,162	3.65	0.003		**-5,699**	**-$12,831**	**-$20,797**
Mohave	Commercial	876	348,956	$ 987,174	2.83	$ 1,409,789	4.04	0.011		**-1,170**	**-$3,311**	**-$4,729**
North Mohave	Residential	2,024	238,108	$ 571,816	2.40	$ 990,134	4.16	0.004		**-984**	**-$2,363**	**-$4,092**
North Mohave	Commercial	88	42,052	$ 132,317	3.15	$ 180,834	4.30	0.025		**-269**	**-$846**	**-$1,156**
Paradise Valley	Residential	4,619	2,210,095	$ 5,278,590	2.39	$ 6,652,158	3.01	0.018	-2.408	**-43,747**	**-$104,486**	**-$131,675**
Paradise Valley	Commercial	346	629,705	$ 1,333,042	2.12	$ 1,930,293	3.07	0.102	-18.252	**-21,485**	**-$45,482**	**-$65,860**
Sun City	Residential	24,100	3,064,772	$ 5,003,455	1.63	$ 7,607,663	2.48	0.003	-0.509	**-35,711**	**-$58,301**	**-$88,645**
Sun City	Commercial	913	761,651	$ 1,489,927	1.96	$ 2,396,130	3.15	0.036	-1.215	**-16,778**	**-$32,821**	**-$52,784**
Sun City West	Residential	14,951	1,342,447	$ 3,710,049	2.76	$ 4,244,490	3.16	0.001	-0.27	**-6,126**	**-$16,930**	**-$19,369**
Sun City West	Commercial	428	274,409	$ 866,808	3.16	$ 1,011,897	3.69	0.025	-1.995	**-5,180**	**-$16,363**	**-$19,101**
Willow Valley	Residential	1,506	47,640	$ 255,217	5.36	$ 597,860	12.55	1.341		**-245**	**-$1,315**	**-$3,079**
Willow Valley	Commercial	21	3,129	$ 31,961	10.21	$ 53,009	16.94	2.499		**-6**	**-$66**	**-$110**

EXHIBIT BR-6

BICKEY RIMAL
Senior Project Manager

Bickey Rimal has over 11 years of progressive experience in the energy and environmental sector. Mr. Rimal joined Concentric in 2011 after completing his Masters in International Public Affairs with a focus on Energy Policy from the University of Wisconsin in Madison. Mr. Rimal has provided expert testimony on multiple occasions in rate related matters. In addition, I have led and contributed to projects involving revenue requirement, cost of service, rate design, rate of return estimation, energy market assessments, and utility performance benchmarking. His work often involves financial modeling, statistical and econometrics analysis, and regulatory research. His modeling involves statistical software SPSS and R and programming using Visual Basic for Applications (VBA). Prior to enrolling in the graduate program, Mr. Rimal worked at ICF International, a global energy and environmental consulting firm, for three years. At ICF, Mr. Rimal was extensively involved in projects dealing with policy design and implementation, cost-benefit analysis, economic impact analysis, regulatory evaluation, and environmental risk assessment.

REPRESENTATIVE PROJECT EXPERIENCE

Regulatory Proceedings and Litigation Support

Mr. Rimal has been involved in projects dealing with all aspects of regulatory ratemaking process. Mr. Rimal has extensively used Concentric's proprietary excel-based macro driven Allocated Class Cost-of-Service ("ACCOS") model for various of utility clients. He has modified and updated the model as needed to suit the specific needs of the clients.

Representative engagements have included:

- Conducted various cost allocation studies, functional studies, and minimum system studies and filed testimony supporting those studies for a vertically integrated Midwest electric utility.
- Supported the development of an allocated class cost of service study and rate design for another vertically integrated Midwest electric utility. Mr. Rimal was directly involved in conducting special cost allocations and functional studies; developing cost of service studies; designing the rates and calculating the associated bill impacts.
- Supported the development of an allocated class cost of service study and rate design for a distribution only electric utility in Pennsylvania. Mr. Rimal modified Concentric's ACCOS model to incorporate three distinct test years simultaneously and automated the results creation process.
- Customized Concentric's ACCOS Model to fit the needs of a municipal water utility in the Northeast.
- Responsible for the development of various cost allocation studies for two electric and gas utilities in New York as part of the cost of service study.

- Supported the developed revenue requirement model to comply with a new performance based formula ratemaking process for a Midwest electric utility.
- Supported cash working capital studies on multiple cases by conducting billing lag analysis involving extremely large data sets utilizing SPSS and R software.
- Created model in R to statistically compare hourly load data between two distinct types of meters to assist a utility in its load research program.
- Created an excel based benchmarking model that have been used on multiple occasions to assess performance of several utilities against various peer groups.
- Supported the development of a rate model to calculate the annual cost of service rates as well as a levelized rate for conversion of an oil pipeline into a natural gas pipeline.

Market Assessment and Asset Optimization Review

- Involved on projects, with two different gas utilities in the Northwest, that forecasted the evolution of demand for compressed natural gas and liquefied natural gas in the transportation sector in their respective territories. Mr. Rimal developed models to analyze the market penetration of different transportation fuels under various fuel price spread scenarios and other market dynamics.
- Estimated the impact on electricity prices due to pre-mature closure of certain nuclear facilities using regression analysis. Validated the price impacts by analyzing the generation supply curve for the location in question.
- Annual assessment of asset manager's performance on multiple occasions by conducting asset optimization analysis of client's natural gas portfolio consisting of both transportation and storage assets.

Valuation

- Created a Discounted Cash Flow ("DCF") model to value a generic regulated natural gas local distribution company ("LDC"). The model was customized to create valuation for any LDC covered by SNL Financial by automating the data retrieval process from SNL based on user input. The model had an added functionality of triggering a revenue enhancement when the earned ROE was outside certain pre-established thresholds.
- Created Discounted Cash Flow ("DCF") models to assess the profitability of various generic units operating in the New York Control Area for NYISO.

Capacity Price Forecasting

- Updated and modified Concentric's Capacity model used to forecast capacity prices for various regions within NYISO based on existing and planned generation, planned retirements, transmission constraints, market mitigation rules, gross and net CONE estimates, and other relevant demand curve parameters.

Relevant ICF Experience

- While at ICF, Mr. Rimal was part of a team that assisted the EPA's Clean Air Market Division (CAMD) in analyzing the effect of environmental policies on power generation sector. As a

part of this effort, he was significantly involved in executing as well as maintaining and updating the Technology Retrofit and Updating Model (TRUM). The TRUM model simulates the action of the electric utilities industry under a multi-pollutant emissions trading program.

- Assisted in the creation of an excel model that assessed the impacts of GHG mitigation policies on the competitiveness of the US manufacturing industries.
- Provided support to the Hours of Service regulation by analyzing different crash related data to identify main causes of fatigue among drivers by utilizing logistic regression models.

PROFESSIONAL HISTORY

Concentric Energy Advisors, Inc. (2011 – Present)
Senior Project Manager
Project Manager
Senior Consultant
Consultant
Assistant Consultant
Associate

ICF International (2006 – 2009)
Associate
Analyst
Research Assistant

EDUCATION

University of Wisconsin – Madison
M.A., International Public Affairs, 2011

Colgate University
B.A., Chemistry, Colgate University, 2006

ARTICLES AND PUBLICATIONS

Nemet Gregory F., Braden Peter, Cubero Ed, Rimal Bickey. Four decades of multiyear targets in energy policy: aspirations or credible commitments? WIREs Energy Environ. 2014, 3: 522-533.

AVAILABLE UPON REQUEST

Extensive client and project references, and specific references.

SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
Indiana Utility Regulatory Commission				
Northern Indiana Public Service Co.	2015	Northern Indiana Public Service Co.	Cause No. 44688	Cost Allocation
Northern Indiana Public Service Co.	2018	Northern Indiana Public Service Co.	Cause No. 45159	Cost Allocation
Indianapolis Power & Light Co.	2019	Indianapolis Power & Light Co.	Cause No. 45211	Cost Allocation as it relates to a Special Contract