Exhibit No.:	
Issues:	Rate Case Test Year, Current Rate Structure and Proposed Revenue Stabilization Mechanism, Inclining Block Rate Information, Consolidated Tariff Pricing, Rate Case Expense, Cloud Computing
Witness:	James M. Jenkins
Exhibit Type:	Direct
Sponsoring Party:	Missouri-American Water Company
Case No.:	WR-2017-0285 SR-2017-0286
Date:	June 30, 2017

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. WR-2017-0285
CASE NO. SR-2017-0286

DIRECT TESTIMONY

OF

JAMES M. JENKINS

ON BEHALF OF

MISSOURI-AMERICAN WATER COMPANY

DIRECT TESTIMONY
JAMES M. JENKINS
MISSOURI-AMERICAN WATER COMPANY
CASE NO. WR-2017-0285
CASE NO. SR-2017-0286

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BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

IN THE MATTER OF MISSOURI-AMERICAN WATER COMPANY FOR AUTHORITY TO FILE TARIFFS REFLECTING INCREASED RATES FOR WATER AND SEWER SERVICE	)))))	**CASE NO. WR-2017-0285** **CASE NO. SR-2017-0286**

AFFIDAVIT OF JAMES M. JENKINS

James M. Jenkins, being first duly sworn, deposes and says that he is the witness who sponsors the accompanying testimony entitled "Direct Testimony of James M. Jenkins"; that said testimony was prepared by him and/or under his direction and supervision; that if inquiries were made as to the facts in said testimony, he would respond as therein set forth; and that the aforesaid testimony is true and correct to the best of his knowledge.

James M. Jenkins

State of Missouri
County of St. Louis
SUBSCRIBED and sworn to
Before me this 6th **day of** June **2017.**

Mary Beth Hercules
Notary Public

My commission expires:

MARY BETH HERCULES
Notary Public - Notary Seal
STATE OF MISSOURI
St. Louis County
My Commission Expires April 26, 2020
Commission # 96546828

DIRECT TESTIMONY

JAMES M. JENKINS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is James M. Jenkins, and my business address is 727 Craig Road, St. Louis, MO, 63141.

Q. By whom are you employed and in what capacity?

A. I am employed by American Water Works Services Company, Inc. ("Service Company") and hold the position of Vice President, Regulatory Services.

Q. Please describe your educational background and professional experience.

A. I graduated from the University of Illinois, at Urbana/Champaign in 1983 with a Bachelor of Science Degree in Accounting, and in 1992 received a M.B.A. Degree, with highest honors, from the University of Illinois, at Springfield. I am a Certified Public Accountant ("CPA").

I have more than thirty years of utility experience. My utility experience began in 1984 when I joined the Illinois Commerce Commission ("ICC") as an accountant. While at the ICC, which is responsible for the rate regulation of state public utilities, I worked on a wide range of regulatory issues in the electric, gas, telephone, and water industries. During my eight-year career at the ICC, I held positions of increasing responsibility, including the position of Director of Accounting before joining St. Louis County Water

Company in 1993. At St. Louis County Water Company, I started as the Assistant Manager in Corporate Accounting and was promoted to Manager of Rates in 1994. I was responsible for the financial aspects of the company's rate case filings, and assisted with budget preparation. In June 1999, St. Louis County Water Company was acquired by American Water Works Company, Inc. ("American Water"), at which time I joined American Water.

At American Water, I have held several positions across the enterprise. I was elected Vice President and Treasurer for Missouri-American Water Company ("Missouri-American," "MAWC" or "the Company") in June 1999. In this position, I directed the state finance activities for Missouri until 2002. In 2002, I joined the American Water finance team in New Jersey as a Vice President to assist executive management with the acquisition of American Water by RWE. In 2004, I accepted a Vice President assignment in Finance and led several state finance teams over an eight year period at a regional and divisional level. In 2012, I accepted a Vice President of Rates role leading regulatory resources across the enterprise until 2013. In 2014, I accepted a Vice President of Regulatory and Public Policy position and assisted the business in coordinating regulatory policies across American Water. In 2016, I accepted a Vice President of Regulatory Services role and this is my current position. In this position, I am responsible for leading the regulatory services function across the enterprise.

I am a member of the American Institute of Certified Public Accountants and the Missouri Society of Certified Public Accountants. I currently Chair the Regulatory Law and Rates Committee of the National Association of Water Companies.

Q. What is the purpose of your testimony in this proceeding?

A. My Direct Testimony will address certain of the ratemaking policy issues the Company is presenting to the Commission in this case, including: the appropriate rate case test year; the Company's current rate structure and proposed revenue stabilization mechanism; inclining block rate information, consolidated tariff pricing; rate case expense; and cloud computing.

II. RATE CASE TEST YEAR

A. Missouri's Traditional Use of Rate Case Test Years

Q. Please define the various test years that you intend to discuss.

A. For ease of reference and consistency, Missouri-American witnesses will use the following terms in the discussion of test years throughout the testimony in this proceeding:

- An **historical test year** is a 12 month period ending prior to the filing date of a rate case, normalized to reflect known and measurable changes that occur after the end of the historical test year;
- A **current test year** is a 12 month period for setting rates which extends beyond the date a rate request is filed and as far as up to the date new rates become effective; and,
- A **future test year** (or fully forecasted test year) is a 12 month period for setting rates that begins on or after the date new rates are effective.

Q. Have rates usually been set in Missouri using an historical test year?

A. Yes, in Missouri, an historical test year has long been used to set rates for the future.

Q. Does Missouri traditionally make adjustments to the historical test year?

A. Yes. It is common for the Commission to order an update to the original test year that will include known and measurable changes through a date after the filing of the rate case. Further, the Commission has commonly established a True-Up period. The True-Up period has been described as follows:

> The use of a True-Up audit and hearing in ratemaking is a compromise between the use of a historical test year and the use of a projected or future test year. It involves adjustment of the historical test year figures for known and measurable subsequent or future changes. However, while the "test year as updated" involves all accounts, the True-Up is generally limited to only those accounts necessarily affected by some significant known and measurable change, such as a new labor contract, a new tax rate, or the completion of a new capital asset. Both the "test year as updated" and the True-Up are devices employed to reduce regulatory lag, which is "the lapse of time between a change in revenue requirement and the reflection of that change in rates."

In the Matter of Lake Region Water & Sewer Company, File No. SR-2010-0110, 2010 Mo. PSC LEXIS 794 (August 18, 2010).

Q. What would be a common date for the end of a true-up period?

A. Commonly, that date would be approximately five months before the date new rates would be required to go into effect. For example, in this case, a common true-up period would end on or about December 31, 2017 – approximately five months prior to the May 28, 2018 operation of law date.

Q. Is there a reason why rates were set using historical costs?

A. Yes, where revenue, costs and investment are relatively stable, the historical test year, normalized for known and measurable changes, is a valid measure to set rates. Where, however, significant changes are expected to occur, the historical test year does become

an unsuitable regulatory tool necessitating the use of a different and more accurate measuring tool.

For example, if it is known with certainty that a major plant investment will be placed into service just before new rates become effective (in my example above, any time between the December 31, 2017 true up date and the May 28, 2018 operation of law date), it becomes an almost equal certainty that the new rates – rates that fail to capture the return required on that new investment – will not be fully reflective of the utility's actual cost of service for the period during which they are being set. On the other hand, as the Commission has observed, "[s]ince the Commission uses historical expenses and revenues to set rates, it would be fundamentally unfair to reach forward to grab a single budget item to reduce [a utility's]'s cost of service, while ignoring other anticipated costs that might increase that cost of service."[1] The dilemma, of course, is that, while it may be unfair to reach forward to grab a single cost item, it is equally unfair to fail to recognize known cost or revenue elements and, necessarily, produce rates that do not accurately reflect the revenue, expenses or investments occurring during the time the new rates will be in effect.

B. The Matching Principle and A Future Test Year

Q. Are there circumstances that render the use of a historical test year, even updated as part of the Missouri True Up process, unreliable or unrealistic?

A. There are. From a regulatory and public policy perspective, the rate case test year

[1] *In Re Union Elec. Co*., 257 P.U.R.4th 259 (Mo. P.S.C. May 22, 2007), order corrected, ER-2007-0002, 2007 WL 2142684 (Mo. P.S.C. June 4, 2007), and decision clarified on denial of reh'g, 260 P.U.R.4th 162 (Mo. P.S.C. July 8, 2007), quoted in *State ex rel. Pub. Counsel v. Pub. Serv. Comm'n*, 274 S.W.3d 569, 586 (Mo.App. W.D. 2009).

should produce rates that most accurately reflect the costs during the period the rates are to be effective. A fundamental principle in determining rates is the matching principle, which identifies the relationship between costs and revenues for the test year used, whether historical or projected.

The assumption that costs and revenue remain in balance underlies the matching principle; which requires that the historical test year be a reasonable proxy for the year in which new rates will be in effect (sometimes referred to herein as the "rate year"). Business conditions, however, are likely to change between an historical test year and the rate year, causing both cost and revenue to differ from the historical test year level. For new rates to be fully compensatory to the utility and fair to customers, base period costs, investment, and revenue must differ from their historical test year levels in the same proportion. If they do not, then the imbalance will cause rates to be adopted that are not reflective of the costs, investment and revenue that will exist in the rate year, rendering those rates unreflective of the utility's actual cost of service.

Q Is it reasonable to expect that the expenses, rate base and revenues from the historical test year will exist in the same relationship, even if selective items are updated as part of a True-Up period?

A. Not in the current environment. If the Company was experiencing a trend of significant customer growth or increasing usage per customer, then it is possible that revenue increases could keep up with rate base growth and expenses, thus preserving the historical relationship. The Company, however, is not experiencing revenue growth and is instead experiencing revenue shortfalls and declines. This simple fact virtually ensures that the historical relationship will not be maintained. When the situation is

further compounded by cost pressures and the need for infrastructure investment, it is essentially ensured that the relationship will be significantly skewed.

Q. Have other regulatory commissions addressed the use of a future test year?

A. Yes, for example, the Michigan Public Service Commission commented, in a decision on a future test year rate filing for Consumers Energy, that:

> The basis for using a forward test year is to address the problem of regulatory lag[2] between past and future costs. While the advantage of historical data is its objective and verifiable nature, it lacks the necessary forward perspective required in a changing economic environment. An historical test year is by definition not timely and may fail to adequately consider future demands….What is gained by dealing with data that is "known and measurable" can be lost in forcing a utility to operate with outdated numbers.

Case No. U-15645, Consumers Energy Company 2009. Order issued November 2, 2009, 278 P.U.R.4th, WL 3757080. A future test year solves the fundamental unfairness of "forcing a utility to operate with outdated numbers" that differ disproportionately from their historical test year levels - because it properly aligns the traceable forecast of a utility's revenue, expenses and investment with the first year for which rates are being set.

Q. Are there circumstances that make this case particularly suitable for the use of a future test year?

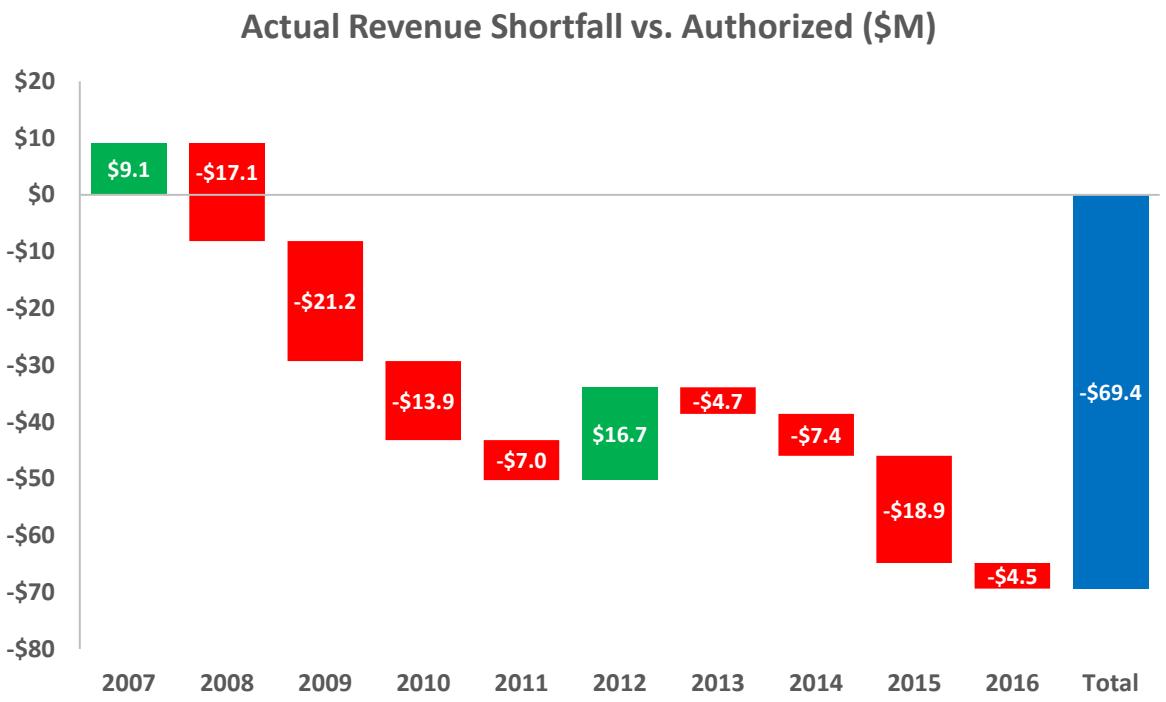
[2] Regulatory lag is the time between the occurrence of an event that triggers a change in the utility's revenue requirement and its recognition in rates. It is, for example, the time between when an investment in plant is placed into service for the benefit of the customer and when the Company can begin earning a return of and on the investment through the ratemaking process. It also applies to the lag in the recovering in rates changes in expenses and revenues. Regulatory lag has several causes. One is the use of a year of historical data in the rate case filing. Another is the time required to prepare a rate case filing. Still another is the time required to execute the rate case and reach a final decision on new rates.

A. Yes. In this case, the historical test year is the twelve months ended December 31, 2016, and the first year new rates will be in effect are the 12 months ending approximately May 31, 2019. Even if selective items are allowed to be updated through a December 31, 2017, True Up period, that period is still far short of the first year new rates will be in effect. For new rates to be aligned with the traditional Missouri historical test year, costs, investment, and revenues must differ from their historical test year levels as adjusted in the same proportion through the rate year. The evidence presented in this case, however, demonstrates almost certainly that business conditions are likely to differ between the historical test year and the rate year, causing both costs and revenues to diverge from the historical test year levels in differing proportions.

Q. What evidence will the Company present?

A. First, the evidence will show that Missouri-American's revenues are declining. The direct testimony of Company witness Gregory Roach demonstrates that the Company's revenue is declining due to a persistent, nationwide trend of declining use per customer that is fueled by national and state conservation mandates and programs, and which shows no sign of abating anytime soon. As Mr. Roach points out in his testimony, the trend for residential declining usage will continue for a minimum of 15 years based solely on appliance life and would be closer to 23 years when including the replacement of fixtures such as shower heads, faucets and toilets. Over the period of 2007-2016, including a record warm/drought in 2012, MAWC under collected its total authorized revenue by approximately $69.4 million. This shortfall is material, averaging approximately 3% per year, fluctuating yearly between 1.5% to as high as 9.5%. Indeed, in many cases, the shortfall of revenue is so severe that it creates a more

extreme financial impact than a 60-year drought did in 2012. And the trend of revenue shortfall is not expected to change. Even if rate base and expenses in the rate year were the same as they were in the historical test year, revenue will not be the same but will instead almost always decline from historical test year levels.



Second, and equally significant, rate base will not stay the same as in the historical test year even if adjusted in a narrow true up period. Company witness Bruce Aiton explains that Missouri-American's planned, capital investment is a significant driver of this rate case. Indeed, Missouri-American plans to invest $492.6 million in plant to serve its customers from the true up period in our last rate case or February 2016 through the end of the future test year in this case (May 31, 2019).

Finally, by successfully controlling costs, Missouri-American mitigated O&M cost increases in the past. Total O&M expenses in the historical test year ended December 31, 2016 (net of acquisitions) have remained essentially flat since 2010. Missouri-

American's cost control efforts compare favorable to the CPI index, and our total O&M levels are approximately $11M lower than they would be had they followed such an index. Missouri-American's investment requirements are anticipated to continue rising for an extended period, and O&M will increase modestly or approximately two percent annually from 2016 levels, while use per customer continues to decline by approximately two percent per year; thereby undermining the matching principle. While the Company's ongoing ability to mitigate increases in O&M costs keeps down the rate relief requested in this case, it does not offset the revenue requirement necessary to account for our increasing level of capital investment and declining sales. A future test year, on the other hand, is particularly appropriate for Missouri-American given the Company's circumstances because it will restore the proper matching relationship of revenues, expenses and rate base that is necessary to establish just and reasonable rates.

C. MAWC's Proposed Future Test Year

Q. Please describe the process by which the Company has constructed the future test year.

A. The process of developing a future test year is very similar to the process by which all test years are developed. Missouri-American's future test year in this case is a product of a careful projection of measurable data from:

- a normalized and fully historical base year (12 months ended December 31, 2016);
- through a verifiable link period (January 1, 2017 to May 31, 2018); and then,
- across the period covering the first year that new rates are expected to be in

place (12 months ending May 31, 2019).

We start by showing a "base year" (an "historical test year") that reflects actual revenues, expenses, and rate base for the twelve months ended December 31, 2016. In order to advance to the forecasted rate year, we considered changes to those cost elements through a verifiable link period (January 1, 2017 to May 31, 2018) and then continue that forecasting process through the future test year. For revenue, we have used a forecast determined by Company witness Roach, who explains how the present rate revenues through May 31, 2019 have been derived. Our forecast of expenses is explained by Company witnesses Bowen and LaGrand. Expenses are generally adjusted using known and measurable changes, adjustments based on Company experience, or adjustments based on an inflation factor. The Company's forecast of rate base is being provided by Company witness LaGrand.

Q. How is the rate base developed for the future test year?

A. Our future test year employs a 13-month average of planned changes to rate base. The forecast is composed of both specific projects that are scheduled to be in service during the future test year and projected levels of other activity such as main and service replacements, meter replacements and similar such project groupings.

The future test year develops rates to be effective in the year following the issuance of the rate order. To not reflect plant that is in service during the relevant test year would result in rates that do not reflect plant additions that will be used and useful and serving the customers during the relevant rate year. Further, we are using a 13 month average of rate base additions for our future test year rate base. The use of this convention means that, if plant was added in equal increments in every month, only approximately

one-half of the ending plant balance would be in rate base. This convention tends to "smooth out" the plant additions. Company Witness Aiton describes the Company's capital investments from February 2016 through May 2018 and from June 2018 through May 2019 which is representative of our future test year.

Q. Is use of a future test year consistent with the matching principle?

A. Yes. The use of a future test year properly addresses the matching principle. In an environment where capital investment and expenses are rising and usage per customer is declining, new rates based on an historical test year, even if selective items are adjusted in a True Up, will neither be fully reflective of the rate year relationships nor provide the Company with a realistic opportunity to earn its authorized rate of return even in the year they are implemented. At the same time, any cost and revenue changes that mitigate or reduce the cost of service should also be reflected. Because the future test year best balances all rate elements, it best reflects the matching principle and, as I will explain below, it is a well-understood and successful ratemaking tool.

Q. Why are future test years a successful ratemaking tool?

A. Future test years are a successful ratemaking tool for several reasons. First, as previously discussed, they allow for a relevant matching between the rates charged and the costs incurred, despite a declining consumption environment. Second, future test years allow for prospective regulation rather than reactive regulation. In this proceeding, for example, the Commission has the opportunity to review the Company's forecasted capital plans, to examine proposed tank painting projects, to weigh in on operational changes such as an increased focus on enhanced maintenance, and to help

direct the transition to monthly billing via AMI technology for the Company's largest service district. In a historical test year, these changes have already happened and a Commission is left with the choice to allow or disallow the investments. In the forecast, these changes are planned, and the Commission has the opportunity to influence capital, to shape quality service, and to ensure smooth transitions during periods of change. Finally, future test years can bolster the Commission's ability to ensure the envisioned results, even when deploying necessary operational improvements or non-ISRS capital projects such as water quality improvements or asset hardening expenditures. Over the long term, depending on the overall rate case outcomes, it's possible this can lead to fewer rate cases and to overall better, more reliable, more affordable service.

D. A "Best Practice" for Water Companies

Q. Is the use of a future test year a novel or unusual approach to ratemaking?

A. No, not at all. The use of a future test year can hardly be considered a novel concept in utility regulation. Since its first use 40 years ago, the future test year has been adopted by an increasing number of regulatory jurisdictions that have recognized the merits of this ratemaking tool. At American Water, 9 of the 14 jurisdictions in which our regulated companies operate authorize the use of a future test year. The future test year is considered a "best practice" for water companies by public utility regulators. In 2005, the National Association of Regulatory Utility Commissioners ("NARUC") adopted a resolution stating, in part, the following:

> WHEREAS, To meet the challenges of the water and wastewater industry which may face a combined capital investment requirement nearing one trillion dollars over a 20-year period, the following policies

> and mechanisms were identified to help ensure sustainable practices in promoting needed capital investment and cost-effective rates: a) the use of prospectively relevant test years; b) the distribution system improvement charge; c) construction work in progress; d) pass through adjustments; e) staff-assisted rate cases; f) consolidation to achieve economies of scale; g) acquisition adjustment policies to promote consolidation and elimination of non-viable systems; h) a streamlined rate case process; i) mediation and settlement procedures; j) defined timeframes for rate cases; k) integrated water resource management; l) a fair return on capital investment; and m) improved communications with ratepayers and stakeholders…

In July 2013, NARUC's Board of Directors reiterated the use of the 2005 Resolution as a best practice for water companies. NARUC found:

> RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners, convened at its 2013 Summer Meeting in Denver, Colorado, identifies the implementation and effective use of sound regulatory practice and the innovative regulatory policies identified in the Resolution Supporting Consideration of Regulatory Policies Deemed as "Best Practices" (2005) as a critical component of a water and/or wastewater utility's reasonable ability to earn its authorized return; and be it further
>
> RESOLVED, That NARUC recommends that economic regulators carefully consider and implement appropriate ratemaking measures as needed so that water and wastewater utilities have a reasonable opportunity to earn their authorized returns within their jurisdictions; and be it further
>
> RESOLVED, That the Committee on Water stands ready to assist economic regulators with the execution of a sound regulatory environment for regulated water utilities, and will continue to monitor progress on this issue at future national committee meetings until satisfactorily improved.

At its November 2013 annual meeting, NARUC again adopted yet another resolution affirming its support of prospective test years for water and sewer utilities.

Q. Are you aware of any cases that suggest that the Commission has the authority to employ a future test period for ratemaking?

A. I am advised that the Missouri Court of Appeals for the Western District recently

addressed the Commission's authority to use a future test year in a Kansas City Power & Light Company ("KCPL") rate case appeal. *Kansas City Power & Light Company's Request v. Missouri Public Service Commission*, 509 S.W.3d 757, 771–72 (Mo.App. W.D. 2016), reh'g and/or transfer denied (Nov. 1, 2016), transfer denied (Feb. 28, 2017). KCPL had proposed to include in its revenue requirement projected increases in regional transmission organization costs and property taxes. In the Report and Order, the Commission chose to not include projected costs in KCPL's revenue requirement because: 1) the projected future costs were not presented until surrebuttal testimony, violating the Commission's rule that such evidence should be a part of the company's direct testimony; 2) it found the estimates of future costs to be unreliable; and 3) the Commission had doubts as to whether it had authority to grant the requested relief. As to the matter of whether the Commission has the authority to adopt a future test year, the Court of Appeals appeared to answer that question in the affirmative:

> In determining rates, the PSC may consider all facts that in its judgment have a bearing on the proper determination of rates. *See* Section 393.270.4; *State ex rel. Pub. Counsel*, 397 S.W.3d at 447-48. Relevant facts, of course, include forecasts of future costs. *See Fraas*, 627 S.W.2d at 886 ("the Commission must make an intelligent forecast with respect to the future period for which it is setting the rate; rate making is by necessity a predictive science").

Kansas City Power & Light Company at 771-72. The remaining questions – whether the facts make the use of a future test year a "proper determination of rates" – appears clear in this case. Here, rate base and expenses will be increasing while use per customer continues to decline by approximately two percent per year. Therefore, the relationship between revenues, expenses and rate base that existed in the historical test year, even if updated in a narrow true up period, will not carry forward into the future

test year. Under the circumstances, the use of a fully forecasted test period will restore the matching principle.

Q. Is setting rates that will utilize data that will almost certainly not be relevant during the period rates will be in effect in the best interest of customers or the Company?

A. No, it is not. It is in the best interest of all stakeholders to set rates that properly balance revenues, expenses and investment. Regulatory commissions have long recognized that just and reasonable rates are those that properly balance the interests of the customers, investors and the general public. The future test year, especially under the circumstances described in this rate filing, best achieves that balance.

III. CURRENT RATE STRUCTURE AND PROPOSED REVENUE STABILIZATION MECHANISM

Q. What is the purpose of the Company's proposed revenue stabilization mechanism?

A. The Company's proposed revenue stabilization mechanism ("RSM") is designed to maintain the Company's revenues at the level the Commission approves in this case going forward. The mechanism effectively removes the errors that are inherent in the process of forecasting the test year level of sales. As noted below, these forecasting errors are caused by the changes in volume of water sold due to factors beyond the control of the Company or the Commission (i.e., the Commission has no mechanism in traditional ratemaking to take this into account). The intent of this mechanism is to

better match the expected test year revenues with actual revenues over time.

Q. Why is the RSM needed?

A. Since most of Missouri-American's costs are fixed yet its rate structure is based, largely, on volumetric charges, any factors that affect sales, either positive or negative, will necessarily drive a wedge between the revenue level the Commission approves in this case and the actual level experienced in the rate effective period. Under traditional regulation it is assumed that the Commission approves sales volumes that, on average, do a fair job predicting actual sales going forward. (The term *fair* refers to an estimated level of sales that, on average, neither overestimates nor underestimates the actual level of sales over time.) The reason this is important is that if test year forecasts are an unbiased estimate of future sales, the Company would only need to file a rate case if its costs increase and not for the *sole* purpose of updating its sales forecast. For reasons that are further explained below, it is becoming difficult, if not impossible, to project a level of test year sales that is unbiased in this way. By allowing Missouri-American to collect the revenue authorized by the Commission in a general rate case, an RSM will provide Missouri-American with revenue stability for ongoing programs and investments to maintain and improve efficiency and service reliability and removes a disincentive for Missouri-American to promote end use efficiency.

Q. What is the effect of a reliance on uncertain forecast sales volumes?

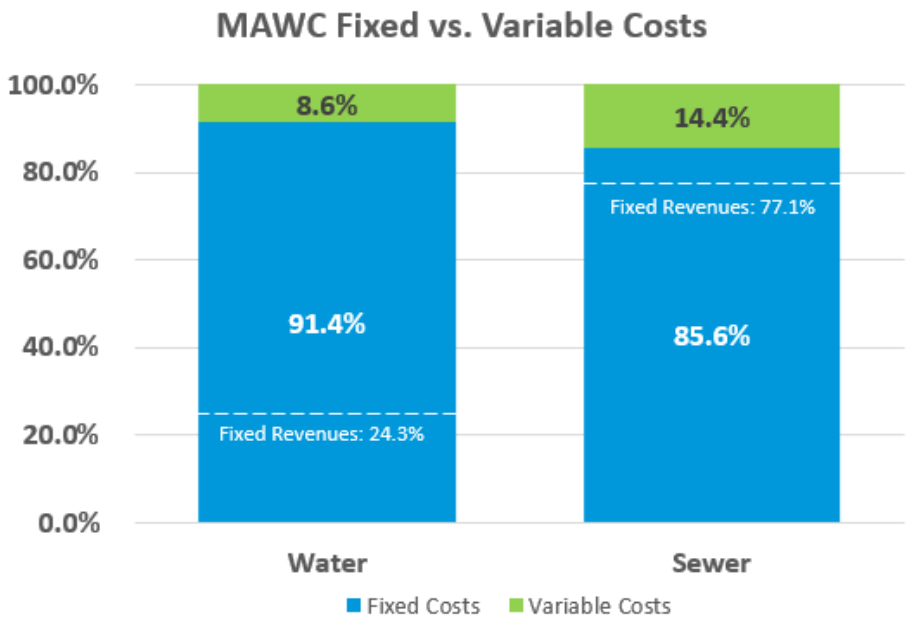
A. Mr. Roach's testimony explains in detail that Missouri-American's usage from existing residential customers is declining by about 2 percent per year and that this trend will continue for many years; certainly well beyond the future test year in this case. Because this effect on sales is known now, we also know that after this rate case is finalized,

any forecast of sales based on the historical period is already incorrect, and it will be higher than the actual sales experienced in a normal year. Since sales are the primary driver of revenues, this reduces actual revenues and constrains the utility's ability to make investments in its facilities and improvements in its operations. Given that much of Missouri-American's costs are in fixed assets in source of supply, treatment, and transmission and distribution facilities that do not vary with volumes, any mismatch in revenues as a result of inaccurate billing units will create unnecessary pressure on the ability of the utility to invest in a timely manner. The need to fund these significant, non-revenue producing investments and fund improvements in its operations doesn't vary with usage. The facilities needed to provide water service to customer's premises are necessary whether that customer uses a minimal amount of water or more per month.

Q. What is the relationship between Missouri-American's costs and revenues?

A. Chart 1 below shows, rather starkly, that most of Missouri-American's costs to provide water service are fixed, while most of its revenues are variable. Chart 1 shows the relationship between fixed and variable costs and revenues for water and sewer customers based upon 2016 actual data.

CHART 1
Fixed v. Variable Costs and Revenues for Water



Approximately 91 percent of Missouri-American's water system costs are fixed and only 9 percent of the Company's costs are variable. In contrast, only approximately 24 percent of the revenues are fixed (including fire protection and miscellaneous revenues), while approximately 76 percent of the revenues are variable. Missouri-American, therefore, relies very heavily on variable (or volumetric) revenues for collecting fixed costs. With respect to sewer system costs approximately 86 percent of Missouri-American's sewer system costs are fixed and only 14 percent of the Company's costs are variable. Approximately 77 percent of our revenues are fixed, while approximately 23 percent of the revenues are variable for the sewer system. Although much better than our water operation Missouri-American still relies on variable (or volumetric) revenues for collecting fixed costs on our sewer operations.

Q. Why do these facts create a public policy concern?

A. The effect of this rate design, on both the water and sewer systems, creates what is called the *throughput incentive*. That is, the more water customers use, the more revenue the Company collects and the better its financial performance. Yet, at the same time public policy, as well as Company policy, is aimed at promoting more efficient use of the water resources of the state. Any actions taken by the Company or the government (local, state, or Federal), no matter how beneficial to society, create a disconnect between the public policy goal of more efficient use of water resources and the Company's legitimate financial objectives. Despite this clear policy of favoring efficiency and conservation, Missouri-American is penalized if it promotes the more efficient use of resources, as its sales will lag, and its financial performance will deteriorate.

Q. Are Missouri-American's sales volumes variable?

A Yes. Both weather and declining usage per customer cause Missouri-American's sales volumes and revenues to vary from approved levels. As explained in the Direct Testimony of Company Witness Roach, the variability in weather and customer usage patterns has had a substantial effect on Missouri-American's actual sales volumes and therefore revenues.

Q. Please explain how weather variability affects Missouri-American.

A. As a general rule, customers use more water during hot, dry weather (primarily in the summer months) and less during cool, wet weather. A rate design that relies heavily on sales volumes to recover costs results in greater revenues for the utility and increased costs to customers when the weather is hot and dry and less revenues to the utility and

lower costs to customers when the weather is wet and cool. In short, a water utility's revenue is significantly influenced by the randomness of weather, which is outside the utility's control and bears only a limited relationship to the cost of providing water service.

Q. How does declining usage per customer affect Missouri-American?

A. Notwithstanding weather variability, Missouri-American customers are using less water per customer than they have in the past. As Mr. Roach's Direct Testimony demonstrates, Missouri-American has seen a continued and persistent trend of declining usage per customer. Residential usage per customer is steadily declining by approximately 2 percent annually (please refer to the Direct Testimony of Mr. Roach for more details). Mr. Roach explains that Missouri-American's experience is consistent with a national trend of declining water usage per customer. Reduced water sales and the resulting reduction in revenues are having a significant adverse financial impact on Missouri-American. In fact, Missouri-American has not recovered the revenues authorized by the Commission in its rate cases in 8 of the last 10 calendar years, (see Schedule GPR-6 attached to Mr. Roach's testimony). The reductions in water sales are therefore a significant concern because they are a source of fiscal stress for the Company and are a potential disincentive to further investment.

Q. Does Missouri-American's proposed RSM address these public policy concerns?

A. Yes, it does. The RSM will afford Missouri-American a realistic opportunity to collect the revenue necessary to recover the level of revenues authorized by the Commission in this case, independent of sales volume.

Q. How does the RSM differ from Missouri-American's current ratemaking structure?

A. Although Missouri-American's current ratemaking structure sets prices based on costs and a fixed level of expected revenues, the utility's revenues actually flow up or down as water sales volume changes between rate cases. In contrast, once the revenue requirement is set, the RSM allows the price to flow up or down as sales volume changes in between rate cases.

Q. Why is an RSM necessary when declining usage can be factored into the rate case sales forecast?

A. Because sales volume continues to decline in each subsequent year after the conclusion of a rate case, unless the Company files annual rate cases, it will always experience under-recovery of its revenues. The RSM stabilizes revenues, and hence rates between base rate cases. Furthermore, revenue is based on a forecast of normal weather conditions, which implicitly includes such factors as heat and rainfall. Sales, however can increase from that level in a hot, dry year or decrease significantly in a cool, wet year. Any deviation from the normalized usage forecast can be captured by the RSM, both positive and negative.

Q. Please describe the components of the proposed RSM and how the RSM would operate if the Commission approved it.

A. Company witness Watkins will discuss the specific mechanics of the RSM in his Direct Testimony.

Q. Does the proposed RSM have a reconciliation mechanism?

A. Yes, again, Mr. Watkins will address the particulars of how the RSM will operate.

Q. Is there evidence of a widespread concern by public utility regulatory commissions with traditional water and wastewater utility rate design that would be alleviated by the RSM?

A. Yes. At its November 2013 annual meeting, NARUC adopted a resolution that supports consideration of alternative recovery mechanisms for water and wastewater utilities. The NARUC resolution states, in part:

> WHEREAS, Traditional cost of service ratemaking, which has worked reasonably well in the past for water and wastewater utilities, no longer adequately addresses the challenges of today and tomorrow. Revenue, driven by declining use per customer, is flat to decreasing, while the nature of investment (rate base) has shifted largely from plant needed for serving new customers to non-revenue producing infrastructure replacement and compliance with new drinking water standards; and
>
> WHEREAS, The traditional cost of service model is not well adapted to a no/low growth, high investment utility environment and is unlikely to encourage the necessary future investment in infrastructure replacement; and
>
> WHEREAS, Compared to the water and wastewater industry, the electric and natural gas delivery industries have in place a larger number and a greater variety of alternative regulation policies, such as multiyear rate plans and rate stabilization programs, and those set forth in the 2005 Resolution; and
>
> WHEREAS, The U.S. water industry is the most capital intensive sector of regulated utilities and faces critical investment needs that are expected to total $335 billion to $1 trillion over the next quarter century, as noted in the American Society of Civil Engineers 2013 Report Card for America's Infrastructure… NARUC's resolution expressly supports alternative recovery mechanisms for water and wastewater utilities that address the above concerns.

The NARUC resolution goes on to state that

WHEREAS, Alternative regulatory mechanisms can enhance the efficiency and effectiveness of water and wastewater utility regulation by reducing regulatory costs, increasing rates for customers, when necessary, on a more gradual basis; and providing the predictability and regulatory certainty that supports the attraction of debt and equity capital at reasonable costs and maintains that access at all times

Q. How do you interpret this resolution?

A. The NARUC's resolution encourages utility regulatory commissions to adopt alternative rate mechanisms as a means to remove the disincentives to capital investment from the ratemaking process (e.g., RSM) and provide regulatory incentives to capital investment (e.g., ISRS) as a way of supporting the ongoing need to attract debt and equity capital at reasonable costs. NARUC also recognizes that alternative regulatory mechanisms can improve the ratemaking process by reducing regulatory costs and increasing rates, when needed, on a more gradual basis.

Q. Are revenue stabilization mechanisms such as the proposed RSM recognized in the regulatory community as an effective means of addressing the shortcomings of volumetric rate design?

A. Yes. An RSM is a rate mechanism that has been adopted in many states[3] as a way to eliminate the "throughput incentive" to water and energy efficiency initiatives and investment. Clauses similar to the RSM proposed here have been successfully used for some time for water utilities in New York and California, and have been more recently adopted for water utilities in Connecticut, Nevada, Maine and Illinois. In addition, RSMs have been approved for gas utilities in 21 states and an additional 4 states have

[3] A 2013 study by the Brattle Group entitled "Alternative Regulation and Ratemaking Approaches for Water Companies: Supporting the Capital Investment Needs of the 21st Century," was prepared for the National Association of Water Companies, (September 30, 2013) found that 27 states for electricity and 30 states for natural gas delivery, and 5 states for water have this kind of mechanism.

mechanisms pending, according to the December 2015 report from the American Gas Association entitled "Innovative Rates, Non-Volumetric Rates, and Tracking Mechanisms: Current List." The Report also states that Weather Normalization Adjustments have been allowed in 24 states. A December 2014 report by the Institute for Electric Innovation lists 31 states and the District of Columbia that have an approved fixed cost recovery mechanism for electric utilities.

Q. Do any other American Water affiliates operate with an RSM?

A. Yes, New York-American Water Company's first Revenue Adjustment Clause ("RAC") was established in October 1988. The first California-American Water Company Revenue Adjustment Mechanism and Modified Cost Balancing Account ("WRAM/MCBA") was implemented in the fourth quarter of 2008. Illinois-American received approval of the Volume Balancing Adjustment Rider ("VBA") in December 2016. Company witness Watkins provides a more detailed explanation of the California, New York and Illinois mechanisms in his Direct Testimony.

Q. Would the RSM better align the interests of Missouri-American, its customers, and the state of Missouri?

A. Yes. An RSM makes MAWC indifferent to selling less water, recognizes that normal weather is a condition that will likely never be achieved, and effectively reduces the adverse impacts of weather variability for both the Company and its customers. Implementation of this alternative regulatory mechanism will remove a disincentive to promote water efficiency and will support revenues for continued water efficiency investments. Management decision-making can focus on making least-cost investments to deliver reliable water services to customers even when such investments

reduce sales. It provides the appropriate regulatory framework to work collaboratively toward promoting water and energy efficiency and conservation. The result is a better alignment of customer and shareholder interests to provide for more economically and environmentally efficient resource decisions.

Q. What other benefits would the RSM provide?

A. By allowing for periodic adjustments (credits and surcharges) in between rate cases, the RSM should reduce rate case frequency. The RSM also would result in rate increases for customers, when necessary, on a more gradual basis. In this environment of declining sales, a company suffers revenue erosion in between rate cases under the current ratemaking structure that will prompt the filing of more frequent rate cases. With the implementation of an RSM, the Company will not need to file a rate case simply to recover revenue shortfalls. So customers should benefit from both a reduction in contested issues in rate cases, a reduction in the frequency of rate cases based on persistent revenue shortfalls, and as a result, reduced rate case expense. Furthermore, if abnormally hot and dry weather caused the Company to experience abnormally high sales, the RSM will credit back to customers the revenue in excess of the authorized amount (less the higher production costs associated with the higher sales volumes).

Q. Has the Company analyzed how the RSM would have impacted Missouri-American had it been adopted previously?

A. Yes. The Company under-collected its approved revenues net of production costs in all years except 2012, when credits for over-collections would have been issued to Missouri-American's customers. Company witness Watkins Schedule JMW-3 shows

the over/under collection of the authorized revenues, the production costs and the net of the two items. A positive number reflects the amount of the surcharge and a negative number reflects the amount of the credit to customers.

Q. Are the underlying reasons for the RSM beyond the direct control of the Company?

A. Yes, both weather and customer usage are beyond the direct control of the Company and significantly impact the volume of water sold, which in turn impacts revenues and power, chemicals and waste disposal costs. Clearly weather is the most significant component in this regard, is subject to significant variations, and is beyond the Company's control. Declining usage is also beyond the control of the Company, as it reflects both a conservation ethic among the public and government policies to conserve water through more efficient appliances and plumbing fixtures.

Q. Will the RSM guarantee that Missouri-American earns a profit?

A. No. The RSM only insures that Missouri-American will receive its authorized revenues. If MAWC's costs increase, its revenues will not change and its net income declines. Therefore, MAWC must still manage its costs to earn a profit.

Q. Under the RSM, will customers who use less pay less?

A. Yes, as discussed in Mr. Watkins' Direct Testimony, they will pay less in their current bill because they are using less water. They will also pay less when and if a surcharge is issued because the surcharge is volume based. Customers who use less water will pay a lower surcharge. They will also pay less when and if a credit is issued because the credit is a one-time fixed amount. The lower the customer's consumption the higher

credit he or she receives as a percentage of their bill.

Q. Does an RSM eliminate some of the difficulties of trying to design an effective weather normalization mechanism for a water utility?

A. Yes, weather itself creates fluctuations in usage, costs, and revenues that are outside the utility's control. As a general rule, usage is increased by hot, dry weather and reduced by cool, wet weather, primarily in the summer months, although the variation is regionally influenced, as well. As Mr. Roach can attest, however, weather, alone, has never been satisfactorily addressed through traditional ratemaking models for water utilities (as opposed to gas and electric utilities where heating and cooling degree days correlate well with usage). Variations in heat, precipitation, cloud cover and other factors make predicting the effect of temperature alone on outdoor usage extremely difficult. What is the case, however, is that actual weather can work either in favor of or against the Company from a financial standpoint as it will collect more or less revenue than determined by the revenue requirement, even if usage is "normalized." The Company has no effective way of managing or controlling this factor under its current ratemaking channels. Although the ratemaking process has historically tried to take this into consideration by basing rates on "normal" weather conditions, as a practical matter, normal weather is never really achieved. In fact, "weather" is difficult to even define in a statistical sense, and establishing "normal" weather is even more difficult. A mechanism that mitigates the adverse effect of weather variability on revenues recognizes that normal weather is a condition that will likely never be achieved and effectively reduces the adverse impacts of weather variability for both the Company and its customers. Even with weather variability, people in Missouri are

using less water every year, and Missouri's experience is consistent with a national trend of declining water usage per customer. We forego additional revenues when we invest in efficiency efforts; yet significant efficiency investments are (likely to be) a necessary component of a least-cost mix of resources. The current ratemaking structure is simply not well adapted to a declining usage, no growth, high investment utility environment and is unlikely to encourage the necessary future investment to improve efficiency. There is a need for revenue consistency to enable planning and deployment of the most efficient resources to cover operating and maintenance expense as well as ongoing capital projects.

Q. What other benefits would a RSM provide over traditional tariff designs?

A. One of the more controversial aspects of traditional rate cases is the forecast level of water sales during the year the new rates will be in effect - regardless whether a particular jurisdiction uses a historical, current, or future test year. It is well-documented that for most water companies, water sales per customer are remaining flat or declining. With little to no customer growth to make up the difference in declining use per customer, rates must be raised to provide the lost revenues. As Mr. Roach's testimony explains, whether through simple daily tasks or the installation of more water efficient products, our customers have found ways to decrease water use in their homes. Nevertheless, some parties argue that any decline in sales is temporary and revenue projections continue to fail to adequately reflect the declining use. An RSM can generally reduce or eliminate most, if not all, controversies over determining pro forma revenues.

Q. How will an RSM improve the ratemaking process and reduce rate case controversy?

A. As a ratemaking tool, MAWC's proposed RSM should effectively reduce or even eliminate the contentiousness related to the process of determining the projected pro forma water volumes used to set water rates, and will help ensure that the Company would receive the authorized revenue, no more and no less, and customers would pay the appropriate price for water service in their monthly bills, whether collected through the fixed service charge or the volumetric charges. Depending on how the RSM is designed, it will generally reduce or eliminate controversies over sales forecasting because any errors are trued up.

Q. Does implementing an RSM excuse the need to perform an accurate sales forecast because the RSM will correct any inaccuracies?

A. No. The Commission should always strive for the most accurate sales forecast possible. In our case, that would mean adopting Mr. Roach's sales forecast that takes into account the declining use per customer. Nevertheless, sales will still be influenced by weather, as well as other factors such as the overall economy. Permitting a utility actually to achieve the revenue forecasted is simply good ratemaking policy.

Q. Do you believe that the RSM differs fundamentally from other automatic adjustment clauses?

A. Yes, I do, in several significant ways. First and foremost, the RSM is not a cost adjustment clause. It is a revenue adjustment clause. Although some costs such as power and chemicals may be adjusted in the RSM, they are adjusted simply as an adjunct to revenue collection and not independently. For example, if it takes a certain

amount of kwh's to produce x amount of water, then the charge for kwh's in the RSM is simply an adder or deduction to the revenue based on whether more or less water is produced, pumped and sold. In other words, the power cost varies solely based on the volumes of water produced. This is important because rates are based upon an assumption of revenue that the Commission finds is appropriate for the utility to collect. If the utility is collecting more, or less, revenue (as determined by volumetric sales) than found appropriate by the Commission, the RSM does nothing more than to correct the revenue to the amount deemed necessary and appropriate by the Commission. Second, the RSM adjusts revenue for weather and conservation. Weather is entirely out of MAWC's control and water conservation is largely driven by federal and state conservation standards and programs described by Mr. Roach. Third, to the extent the Company would have some control over sales to its customers, it is in the public's interest to eliminate any incentive to increase sales, to make the Company indifferent to sales losses due to conservation, and to provide an impetus to MAWC to foster water efficiency. An RSM would simply allow for recovery of the PSC-approved revenues. That is completely different than adjusting rates to allow recovery of changing expenses.

Q. Is it your understanding that the Commission is authorized to adopt an RSM?

A. I will let our attorneys address the specifics of that matter. I would simply point out that the law appears to permit an RSM:

> 393.130. 4. Nothing in this section shall be taken to prohibit a gas corporation, electrical corporation, water corporation or sewer corporation from establishing a sliding scale for a fixed period for the automatic adjustment of charges for gas, electricity, water, sewer or any service rendered or to be rendered and the dividends to be paid stockholders of such gas corporation, electrical corporation, water

> corporation or sewer corporation; provided, that the sliding scale shall first have been filed with and approved by the commission; but nothing in this subsection shall operate to prevent the commission after the expiration of such fixed period from fixing proper, just and reasonable rates and charges to be made for service as authorized in sections 393.110 to 393.285.

I would also note that the Missouri Court of Appeals has specifically found an alternative rate mechanism – straight fixed variable ("SFV") rate design – to be lawful. The Court, in a 2012 case, stated that "MGE's SFV rate design is not 'unlawful' under section 393.130 and 393.140 because it requires payment only of the customer's true cost of service, and does not prejudice or disadvantage any customer." *State ex rel. Office of the Public Counsel v. PSC*, 367 S.W. 3d 91, 106 (Mo.App. 2012). I find it noteworthy that the Court noted that "[t]he SFV rate design "stabilizes both customers' bills and [r]esidential class revenue ... [,]" and prevents customers from overpaying MGE's cost of service during colder-than-normal weather as occurs with a fixed+volumetric rate design (*id.* at 101), which is, of course, similar to what the RSM will do.

Q. Do you consider the RSM to be "single issue ratemaking" that adjusts rates outside of a rate case without considering "all relevant factors?"

A. No, I do not. Single issue ratemaking would generally involve adjusting existing rates based on a change in the cost of a single expense item without giving due consideration to whether other costs have gone up or down. The RSM does not do that. All that the RSM is doing is ensuring that level of revenue deemed appropriate by the Commission is, in fact, being collected. If more revenue is being collected, the RSM provides a credit to customers. If less revenue is being collected the RSM imposes a surcharge.

The RSM is indifferent to the costs or investment that lie behind that revenue. All the RSM is doing is harmonizing the actual revenue collected to the amount of revenue deemed necessary in the rate order.

Q. Will an RSM create volatility for customers through periodic rate changes?

A. No, quite the contrary. An RSM, as proposed by the Company, actually decreases volatility and rate shock for customers through smaller and more frequent rate changes as opposed to larger rate increases that must be filed to recover the revenue lost through steadily declining sales. Furthermore, to the extent that MAWC can avoid filing for a rate increase to recover such sales declines (because they are recovered through the RSM), that will reduce the frequency and cost of base rate filings.

Q. Is it accurate to state that an RSM shifts business risk from utilities to customers?

A. No, I do not believe that is the case. There is no shifting of risk, as a utility has an equal chance of over-and under-collecting revenue under traditional ratemaking. MAWC witness Bulkley will explain how the adoption, or absence, of an RSM will impact the Company's cost of equity.

Q. Do you believe that an RSM deprives customers of the benefits of their efforts to conserve water?

A. No, I do not. An RSM does not remove the actual benefits of conservation. Removing barriers to improving efficiency and needed investment is in our customers' interests because, over time, it reduces the cost of providing water service to customers and promotes the sustainability of our natural resources. Furthermore, even with an RSM, the customers who use less will always save more relative to similarly situated

customers.

Q. Is an RSM unfair to low-income consumers who already use low amounts and have difficulty affording efficiency upgrades?

A. I do not believe that to be the case. First, a low use customer is not necessarily a low income customer. Moreover, the RSM is beneficial to low income customers because it keeps the majority of each bill volumetrically-based, where other mechanisms such as Straight-Fixed Variable ("SFV") pricing shift more of the cost of service to lower use customers. That is one of the reasons why we have filed for an RSM instead of seeking a SFV rate design alternative.

Q. If the Commission were to determine that the RSM could not lawfully operate as the Company envisions, because it could not contemporaneously recover the associated production costs, would that be fatal to the concept of an RSM?

A. No. The revenue portion of the RSM could operate as envisioned while the associated expenses could be deferred as a regulatory asset or regulatory liability depending on whether revenue was greater or less than envisioned in the rate order. Those deferred assets or liabilities could be considered for recovery the next time the Company files for a base rate adjustment. Mr. Watkins will discuss various types of RSMs that the Commission may wish to employ.

Q. If the Commission were to determine that the RSM could not lawfully operate as the Company envisions because the periodic adjustments were not lawful, would that be fatal to the concept of an RSM?

A. Again, no. The Commission can authorize the Company to defer as a regulatory asset

or regulatory liability, the revenue shortfalls or overages for the period until the next rate case. The problem with this approach, however, is that a "hockey stick" rate effect might result if the revenue divergence was large enough or enough time passed to make the cumulative increase very large. This is why we believe that our recommended approach to the RSM, which is an approach that has been used in a number of jurisdictions, is lawful and appropriate and in the best interests of all stakeholders in this case.

Q. Is the Company proposing to change the meter charge?

A. Yes, the Company is proposing to lower the monthly 5/8" meter charge to $10.00 in this case. An RSM would allow the Company to recover the revenues authorized by the Commission, and therefore allows the Company to lower the fixed meter charges for all of the customers.

Q. Please summarize the reasons supporting the adoption of the RSM.

A. Rate designs that tie a utility's revenue recovery directly to sales volume has prompted two widespread concerns in modern utility regulation. First, rewarding a water utility for selling more water implicitly encourages water use and penalizes a water utility for encouraging end use water efficiency and conservation. This misalignment is troubling because utilities are often the best positioned to improve water efficiency and promote conservation. Second, because of seasonal variability and declining use per customer, volumetric rates do not give water utilities a reasonable opportunity to recover their authorized revenues. Accordingly, these utilities are constrained in their ability to invest in needed infrastructure, or to raise the capital required to do so. The current

ratemaking structure incents Missouri-American to sell more water, not to encourage efficiency on the part of its customers. The RSM will: 1) make Missouri-American indifferent to selling less water; 2) remove the disincentive to promote water efficiency; 3) reduce the adverse impact of weather variability for both the utility and its customers; 4) reasonably insure that revenues for continued water efficiency investments is available; and, 5) reduce the contentiousness of rate cases. The result is a better alignment of all stakeholder interests.

IV. INCLINING BLOCK RATE INFORMATION

Q. In the final order of the Company's most recent rate case, WR-2015-0301, did the Commission ask the Company to file information on inclining block rates in the next rate case?

A. Yes.

Q. What are inclining block rates?

A. Inclining blocks are a rate design alternative in which customers are charged higher per unit costs for their water as the number of units consumed increases. In other words, the customer pays more for the last drop of water than they do for the first drop of water. Inclining block rates are considered typically when systems are nearing the brink of their capacity and are requiring either usage constraints or capacity expansions that may cause additional supply costs.

Q. Are inclining block rates commonly used in the American Water system?

A. While inclining block rates may be common in some portions of the country like the drought stricken western states, in the American Water system, I am only familiar with

two states that use inclining blocks. The first is California, a water supply challenged state which has experienced extensive drought in recent years. The second is New York, where there are supply and water quality issues related to peak summer usage. In both of these states, a revenue stability mechanism is in place to help mitigate the revenue volatility that can result.

Q. Is the Company proposing inclining block rates in this proceeding?

A. No. The Company is proposing uniform rates in this proceeding. There are minimal water supply issues in Missouri that would warrant implementing inclining block rates. More importantly, Mr. Roach's testimony demonstrates that there is a very strong and continuing conservation effect in Missouri that is already reducing annual usage by about 2 percent. As he explains in detail, this trend is the result of very aggressive nationwide laws governing energy and water usage in appliances as well as the introduction of plumbing fixtures, such as low usage toilets that use a fraction of the water that was used by older devices. These laws and standards, along with a strong and growing conservation ethic have produced a trend of declining usage per customer that Mr. Roach shows will continue in our Missouri service territory for many years. Consequently, the introduction of inclining block rates would be an unnecessary step in Missouri.

Q. Is there anything else Missouri-American can do to discourage discretionary water usage?

A. Yes. Please see my earlier testimony on the RSM proposal and how it would be deployed. The proposal suggests that when a surcharge is necessary due to lower than expected consumption, it is applied volumetrically, so that the price signal for efficient

water use stays in place, and customers pay more if they use more. Conversely, when a credit is necessary due to higher than expected consumption, it is applied through fixed credits, and benefits low usage customers in greater proportion than high usage customers.

This RSM is a complement to the uniform rate design, which increases a customer's bill with every unit of water consumed. A customer on uniform rates who uses more pays more, without any discount, with uniform rates.

V. CONSOLIDATED TARIFF PRICING

Q. What is Consolidated Tariff Pricing?

A. The Commission in MAWC's last rate case described the pricing methodologies as follows:

> 6. The allocation of costs and resulting rates to the water and sewer systems can be accomplished using two methods. The first is district-specific pricing wherein the auditor attempts to collect all the costs of providing service to each individual district and develops rates based on that district's cost of service. Thus, in theory, the ratepayers in any district pay rates designed to recover the cost of providing service to that district. Under district-specific pricing residential customers in St. Joseph, Brunswick, and Joplin would all pay their own, distinct rate.
>
> 7. The second method is single-tariff pricing. In single-tariff pricing all costs of the utility are combined and rates are developed on a system-wide basis. Thus, all customers in a given rate class, for example, residential customers, will pay the same customer charge and commodity rate for the water they consume, no matter where within the company's service territory they live. So, for example, residential customers in St. Joseph will pay the same rates as residential customers in Brunswick and in Joplin.
>
> 8. District-specific pricing and single-tariff pricing are the two extremes on the spectrum of possible methods of allocating costs and designing rates. Allocating costs and designing rates can also be done by consolidating the system into larger districts for purposes of allocating costs and determining rates. Under this consolidated pricing

method, residential customers in St. Joseph and Brunswick might pay one rate, while a residential customer in Joplin might pay a different rate.

Q. Did this Commission order consolidated rates in Missouri-American's last rate case (WR-2015-0301)?

A. Yes. In the last rate case, the Commission ordered a further consolidation of rates for both water and sewer rates. This resulted in three rate areas for water customers and essentially two rate areas for sewer customers.

Q. Does Consolidated Tariff Pricing ("CTP") benefit customers?

A. Yes. CTP provides significant public policy benefits to consumers, MAWC, and to the Commission and should be approved. In fact, the arguments in favor of CTP are stronger today than at any time in the past largely because the issues that lead to the need for CTP are more acute today than in the past.

Q. Are there operational advantages associated with CTP?

A. Yes. Consolidation is not just a cost economies or affordability issue, it is also a quality of service issue. For example, Pennsylvania has taken a well-known and strong stand toward consolidation of small water companies supported by single tariff pricing. In 2011, the Pennsylvania consumer advocate reported to the Pennsylvania legislature that the policy has been helpful in promoting quality water service to customers of smaller "troubled" systems while avoiding the likely rate shock that would have had to occur under fragmented pricing.[4]

[4] "Testimony of Sonny Popowsky. Consumer Advocate," Before the Pennsylvania House Consumer Affairs Committee, March 2, 2011.

Q. In Case No. WR-2015-0301, did the Commission express an interest in further consolidation of MAWC's rates?

A. Yes. The Commission was clear that it was interested in extending CTP, potentially to a single tariff price:

> Full single-tariff pricing is an attractive option, but since none of the parties proposed that option during the case it was not fully considered by the parties. Because of that lack of scrutiny, the option has many unknowns, and the Commission is not willing to take that leap at this time.
>
> The Commission may need to make take that leap in Missouri-American's next rate case as it will likely be facing the prospect of a major new capital construction project in the Platte County district, a district that will have difficulty affording a major capital expense. For that reason, the Commission will expect the parties to fully examine single-tariff pricing in the next rate case. [5]

Q. What are the benefits of CTP?

A. There are several:

1. Better incentives for standard water quality: One of the key benefits of CTP is enabling the implementation of government mandated environmental investment as well as other service quality related water investments.

2. Better incentives for larger water utilities to purchase small under-performing water utilities: In the past few decades, the water industry has changed dramatically. Many smaller water systems simply cannot attain the economies of scale needed to support the necessary investment to meet increasing water quality standards and, as a result, the quality of water suffers. CTP provides an incentive for investment in these small water utilities as the integration of their customers into a larger

[5] In the Matter of Missouri-American Water Company, Report and Order, Case No. WR-2015-0301 (May 26, 2016).

community of customers can spread the cost of needed investment over a larger customer base. This promotes a more ubiquitous water infrastructure investment in the state and brings cost-effective, higher quality, water services to a larger number of citizens.

3. Promotes state economic development goals: In an age of intense regional and global competition, the advent of new clean water standards has added one more dimension to the competition for jobs and population among states. Non-standardized pricing can create an inconsistent and Balkanized water system for the state. CTP allows larger utilities to spread the fixed cost of providing quality water service over a larger customer base creating a higher quality of water for the entire system and state.

4. Improves affordability for all customers: It is understandable why people that live in areas that are currently receiving service at lower cost than the average would not want to pay for new investments in other regions of the state. CTP, however, creates benefits for all customers in the long-run. Typically, those customers that pay lower than average prices do so because of aging and, therefore, depreciated investment. At some point in the future the utility will need to invest in all regions of the state. CTP mitigates the effect of lumpy investment for all customers while promoting a standard quality of service for the entire state.

5. Lower administrative and regulatory costs: Simplifying rate structures also leads to lower administrative costs as utilities can more easily help consumers who have

questions, lower the cost of billing and collections, and reduce the regulatory cost of separate filings within a single rate proceeding.

Q. Has Missouri-American proposed further consolidation of its pricing in this case?

A. Yes. In this case MAWC is proposing to take additional steps toward consolidated tariff pricing for both our water and sewer state-wide operations. Company Witness LaGrand addresses this tariff consolidation recommendation.

Q. Are there advantages to further consolidation of Missouri-American's pricing?

A. Yes. The most obvious concern that CTP addresses in the industry is the problem with fragmentation and the cost of complying with water and sewer regulations. That the industry is highly fragmented is not in dispute.[6] It is also not in dispute that the cost of complying with regulations experiences economies of scale. By that I mean the per customer average cost of compliance falls, and falls dramatically with the number of customers. Further, the water industry is extremely capital intensive, more so than the gas and electric industries and faces the problem of aging infrastructure. These costs cannot be reduced in the short-run, which further burdens these smaller systems. Finally, these smaller systems struggle to keep up with the administrative burdens, such as timely rate filings, which means they are not able to accurately recover their cost of service within their rates. The inability of small systems to keep up with administrative and regulatory burdens as well as deal with capital costs, coupled with the prevalence of these systems creates inefficiencies within the water and sewer industries.

[6] The Commission noted this fact in the Report and Order in MAWC's last general rate case (pp. 12-13). Case No. WR-2015-0301 (May 26, 2016).

Q. Has the Missouri Commission seen examples of the costs associated with water and sewer compliance where there is no economy of scale?

A. Yes. I believe the Commission is very familiar with the difficulties of small water and sewer companies in Missouri. However, the two recent rate cases associated with Hillcrest Utility Operating Company, Inc. (WR-2016-0064) and Raccoon Creek Utility Operating Company, Inc. (SR-2016-0202) both concerned very small utility systems, requiring capital investment to achieve compliance with regulatory requirements associated with health and safety. Such investment has a significant impact on small systems, primarily because of the lack of economies of scale. In the case of Hillcrest, average users went from water rates of $10.63 to $69.02 per month and sewer rates of $14.63 to $83.56 per month. Raccoon Creek had sewer rates in three areas that went from $38.12 to 95.76 per month; from $26.42 to $95.76 per month; and from $23.48 to $79.74 per month.

Q. How is this lack of economy of scale addressed by consolidated pricing?

A. When water and sewer companies expand their customer base they are able to reduce inefficiencies associated with smaller systems. Larger systems are better able to conform to regulatory burdens and deal with the capital costs associated with upgrading infrastructure by spreading capital costs over a larger customer base. The concentration and consolidation of companies in the water and sewer industries results in increased efficiency. This increase in efficiency allows for lower costs to serve customers as well as improved service.

Q. Does this benefit all customers?

A. Yes. One of the primary concerns of regulators has been the ability to assure that the essential services provided by public utilities are as widely available at reasonable prices to as many members of society as possible at rates that compensate the utility for the total costs incurred inclusive of a fair return. CTP represents one pricing method that promotes simple and understandable tariffs that meets this regulatory goal. The economic benefits of more closely connecting costs with prices are not likely to be significant in this case. This is because the dominant costs incurred by MAWC on a forward going basis are the fixed costs associated with meeting water and sewer standards. For example, promoting safe drinking water per the Safe Drinking Water Act and service reliability through the replacement of aging infrastructure requires substantial investments be made that cannot be avoided. In this case the role of the rate structure becomes one of fairly and efficiently recovering the cost of the needed investment. In sum, if the main economic benefit from more granular cost-based pricing is largely absent, as it seems to be in this case, it is incumbent on regulators to address the broader public interest issues such that all customers can have access to safe and affordable water and sewer services. Consolidated pricing solves two major public policy questions by making it easier for the regulatory body to control the utility's prices while promoting universal service and avoiding discrimination.

Q. In the above-quoted excerpt from the Report and Order in MAWC's last rate case (WR-2015-0301), the Commission predicted that in Missouri-American's next rate case, it would "likely be facing the prospect of a major new capital construction project in the Platte County district, a district that will have difficulty

affording a major capital expense." Will the referenced major new capital construction project in the Platte County district be a part of this case?

A. Yes. The project is predicted to be in-service prior to the end of 2017. The project and its purpose are addressed by Company witness Bruce Aiton.

Q. What would be the impact on the Platte County service area or, in the alternative, District 2, if the capital costs were borne only by Platte County or District 2? How does this contrast with the impact if the Commission ordered the consolidation to a single district as proposed by MAWC?

A. Please see the chart below for a high level comparison of the impacts on Parkville only, District 2 only, and Missouri-American in sum. This chart shows that if the large Parkville investment were born only by the Parkville customers, it could cost more than $65 per month for that project alone. If spread throughout District 2, the impact is still more than $10 / month for that project alone. But if the cost is spread out among the entire Missouri-American customer base, the impact drops to less than a dollar a month.

Missouri American Water
Consolidated Pricing Impact of Large Investment

Large Plant Replacement		**$**	**30.0**
Pre-Tax Cost of Capital	11.57%	$	3.5
Depreciation	2%	$	0.6
Property Tax		$	0.9
Revenue Requirement		**$**	**5.0**

	Customers	Monthly Cost per Customer	Current Bill for 5,000 Gallons	Chg to Typical Monthly Bill
If Costs Born by Parkville Only	6,291	$65.85	$39.02	168.8%
If Costs Born by District 2 Only	38,475	$10.77	$39.02	27.6%
If Costs Born by All MAWC Customers	463,706	$0.89	$39.02	2.3%

Q. Will further consolidation of Missouri-American's pricing have the same impact on each rate district after new rates are approved?

A. No, it will not. Because the rate districts have different pricing, some districts will experience higher impacts than do others. This, of course is simply the expected result when districts with differing rates are brought to unity. This, however, is a one-time effect and is unavoidable if consolidated tariff pricing is ever to be implemented. Over, time, of course, the effects are attenuated as each district will no longer be as significantly affected by the introduction of a large investment such as a water treatment plant or major reservoir renovation where the system, as a whole, is responsible for each incremental large investment where the costs can be shared among the ratepayer community generally.

Q. Please summarize your testimony in support of further consolidation of Missouri-American's pricing.

A. The consolidated tariff approach takes a long run view of serving the state on a total Company basis. The aggregation of all customers across the total system provides an ability of the system to absorb the costs of serving all customers on a more equitable basis. Cost of service regulation always involves some degree of cost averaging. The administrative costs of calculating each individual customer's specific costs far outweigh the benefits of such calculations. Customers of the same class under consolidated pricing will pay rates that reflect the costs of providing similar service across the total Company. This avoids the wide disparity in rates that could arise so that customers ultimately pay the same rate for contemporaneous service provided under substantially similar conditions or circumstances.

While cost of service can provide guidance in setting rates, other factors such as affordability, standard quality of service, and ease of implementation are important and need to be considered. CTP has become a more important policy issue in the past decade as more aggressive enforcement of water quality standards have changed making some small water systems not sustainable. Regulators have recognized that the private sector can play a role is solving these public infrastructure problems by providing incentives to expand service into some of these areas. CTP is just such a policy and many regulators have recognized the positive role that uniform rates can play in preventing rate shock, increasing investment, and providing standard water quality to as many citizens as feasible.

The Commission's move in Case No. WR-2015-0301 to a more consolidated rate structure was a positive development for the reasons stated above. Further consolidation in this case as to water customers will take full advantage of the

economies of scale available to the Missouri-American water systems.

VI. RATE CASE EXPENSE

Q. For purposes of this filing, how has the Company treated rate case expense?

A. MAWC has estimated the amount of rate case expense it will incur and proposed to amortize that amount over a 36 month period for recovery in its cost of service.

Q. Should reasonable and prudently incurred rate case expense be recovered?

A. Yes. The cost of litigating a rate case is a normal and essential cost of service for any regulated public utility and should be treated as such. As a regulated utility, MAWC has a legal obligation to provide safe, adequate, and reliable service to its customers. Periodic rate increases are necessary to keep a public utility financially healthy and in a position to continue to provide customers with safe and adequate service at just and reasonable rates. Currently, the only way that MAWC can change its base rates is through the rate case process.

Q. What types of rate case expense will MAWC incur in this case?

A. Because MAWC does not retain in-house resources necessary to fully support a rate case, MAWC will incur rate case expense associated with outside attorneys, outside consultants, and direct charges from the Service Company associated with the rate case. MAWC strategically leverages its available resources to ensure it retains resources, as needed, with the expertise to analyze and explain the expenses, revenues, and investment that impact customers' rates as well as the often-complicated regulatory and ratemaking issues presented in a rate case. It does so with the goal of presenting the facts and explanations for its requested relief as coherently, effectively and efficiently

as possible so the Commission has the information it needs to reach a proper and fair resolution and set just and reasonable rates.

Q. What is the nature of the Service Company charges?

A. MAWC uses Service Company to support the preparation and presentation of all aspects of its rate case, including everything from testimony, schedules and workpapers to discovery and hearings and all the way through briefing until a final order is issued by the Commission. Because rate cases are somewhat cyclical, the Service Company employs several persons that work on rate cases in multiple states. By doing this, individual operating companies like MAWC avoid the need to employ such persons every year, given that rate cases will not take place every year.

Q. How is MAWC charged for the work of these Service Company employees?

A. Service Company employees working on the rate case directly charge MAWC's deferred rate case expense account for the rate case services they provide and do so in accordance with a contract that is a part of the Service Company's Billing Allocation Manual. By charging the deferred rate case expense account, MAWC is able to spread the cost over time, reducing the impact on customers' rates. A more costly alternative would be to increase staffing at Missouri-American to handle rate cases, which would impact the level of O&M expense imbedded into the Company's revenue requirement in this case. Service Company is providing quality and timely service to MAWC and MAWC should not be penalized for rate case related services being charged to rate case expense rather than directly to MAWC's overall O&M expense.

Q. Are you aware that the Commission has decided to provide utilities in some prior cases something less than 100% of their prudent and reasonable rate case expense?

A. I am.

Q. Do you believe that is good regulatory policy?

A. I do not. I would summarize my reasons for this position as follows:

- As mentioned above, rate case expenses are no different than other costs and should be recovered like other costs to the extent they are reasonable and prudent.
- Rate cases necessarily require attorneys and consultants, and other personnel, who have the expertise to address utility regulatory issues, many of which can be quite complex. MAWC does not retain those experts in-house 100% of the time, so it must rely on non-MAWC resources, including outside consultants and Service Company personnel, to file and prosecute a rate case. This is more cost-effective and efficient than having a full staff on hand at all times.
- The burden of proof lies with the utility in rate cases. The Company's goal is to present the facts and explanations for its requested relief as coherently, effectively and efficiently as possible so the Commission has the information it needs to reach a proper and fair resolution and set just and reasonable rates. It should not be arbitrarily limited in how it presents and supports its rate case so long as it does so reasonably and prudently.
- The cost of meeting its goal and the burden of proof can be driven by more than just Company action. Missouri-American's rate cases historically have

included the most complex procedural schedules and protocols among the regulatory jurisdictions where American Water operates. Further, the Company has no control over the amount of discovery or the complexity and number of issues raised by other parties.

- The Company should not be penalized for reasonably and prudently defending its rate case or any position it takes on particular issue in the face of opposition.
- The Company should not be penalized for not retaining full time in house expertise to prosecute its rate cases, as the approach it takes (effectively leveraging Service Company and outside resources as needed) is less costly for customers.
- Filing rate cases is not discretionary and cannot be done without incurring some expense. MAWC is price regulated as the result of a system of regulation created by the General Assembly. Prior to the creation of this system of regulation, an investor-owned utility could charge whatever rate it wanted, whenever it wanted. MAWC has no ability to "opt-out" of this process and, therefore, must incur some level of expense to seek rate relief from the Commission.

Q. How should rate case expense be treated in this case?

A. The Commission should allow MAWC to recover its reasonable and prudent rate case expense amortized over a 36 month period.

VII. CLOUD COMPUTING

Q. What is cloud computing?

A. Cloud computing is the term used to describe off-premise computing solutions. This can include software, platform, or infrastructure solutions that are part of a pool of configurable resources made available to individuals and businesses. Cloud computing often allows for more rapid, flexible, and efficient deployment of technologies and innovations than on-premise solutions can provide.

Cloud computing is becoming the primary means of delivering technology and is slowly replacing on-premise computing solutions in the market place. Even SAP, the Company's enterprise software provider, is now offered as a cloud application.

Q. Why is cloud computing a topic of interest for utility regulation?

A. Cloud computing has become an important topic of regulatory discussion not only because of its benefits and increasing prevalence, but also because of its unique accounting issues. In April 2015, ASU 2015-05, an Accounting Standards Update ("ASU"), was issued by the Financial Accounting Standards Board, which clarified how cloud computing arrangements should be treated. The ASU specified that in certain circumstances, the costs associated with cloud computing should be treated as operating expense.

For utilities, expensing periodic cloud computing investments creates a few barriers. For example, this practice could create periodic spikes in expense with no regulatory recovery. This would result in permanent lag, the threat of which can be a barrier to the deployment of cloud computing solutions. Furthermore, cloud-based investments

usually have a multi-year benefit for our customers. Typically, utility investments with a multi-year benefit are treated as rate base assets and amortized, so that the costs are born equitably by the customers who benefit from the investment. This is done in part to preserve intergenerational equity, a ratemaking principle that could be lost if periodic investments are expensed. Expensing periodic investments in the first year also serves as a barrier to establishing a representative year of expense for ratemaking purposes, as some years may have very high cost and other years very little cost. Customers could either pay too much or too little for technology, rather than merely paying their normalized equitable share.

A ratemaking treatment for off-premise cloud computing investments that is the same as the treatment for on-premise investments would resolve these issues and effectively remove barriers to the efficient deployment of new technologies and innovations. Due to concerns over "permanent lag", intergenerational equity, and finding a fair representative expense, the Company recommends this solution.

Q. Has the National Association of Regulatory Utility Commissioners ("NARUC") taken a position on cloud computing accounting?

A. At the NARUC Annual Meeting in November 2016, the water, gas, and electric committees all passed a resolution on cloud computing. The document resolved that "NARUC encourages State regulators to consider whether cloud computing and on-premise solutions should receive similar regulatory accounting treatment, in that both would be eligible to earn a rate of return and would be paid for out of a utility's capital budget."

Q. Is there a good example of this issue as it relates to Missouri-American?

A. Yes. Missouri-American is planning to invest in SAP's SuccessFactors Employee Central module. Employee Central is essentially a bolt-on to the Company's existing capitalized SAP asset platform.

Employee Central will unite several core SuccessFactors HCM (Human Capital Management) applications and is intended to serve as MAWC's human resources system of record. There are multiple applications within the integrated SuccessFactors suite like Talent Management, Workforce Analytics, and Onboarding. Employee Central will be an improved cloud-based hub for this data and will ultimately replace the on-premise SAP HCM module. Indeed, SAP will no longer be supporting the on-premise HCM module after 2025.

Clearly, cloud computing is part of SAP's strategic direction. They are transitioning in this direction, and American Water will be as well.

Q. Can you provide a little more detail on the SuccessFactors Employee Central project?

A. The SuccessFactors Employee Central project is a near term project with a multi-year initial contract. The cost during the year of implementation is expected to be approximately $3.5 million for American Water and the ongoing annual fees are expected to be a little more than $300,000. An illustration of the multi-year costs is shown below:

American Water SuccessFactors Employee Central Cost Components
($ in millions)

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
ASU Likely Capitalizable						
Solution Development	$ 0.3	$ -	$ -	$ -	$ -	
	$ 0.3	-	-	-	-	
ASU Likely Operating Expense						
License Fee	$ 0.3	$ 0.3	$ 0.3	$ 0.3	$ 0.3	
Implementation Services	2.1	-	-	-	-	
Internal Labor Costs	0.8	-	-	-	-	
	$ 3.2	$ 0.3	$ 0.3	$ 0.3	$ 0.3	
Total	$ 3.5	$ 0.3	$ 0.3	$ 0.3	$ 0.3	$ 4.7

If the company followed the ASU guidance, it is likely that only $0.3 million of the initial $3.5 million initial cost could be capitalized as a long-term asset. In other words, less than 10% of the initial project cost could be spread over the life of the investment. The remaining costs would be expensed in the year incurred. In contrast, for an on-premise solution, the entire $3.5 million initial investment would generally be recognized as a long-term asset. As noted above, this cloud computing accounting creates a challenge. Should customers pay for the $3.5 million as though it is part of ongoing expense? Or should the company miss recovery entirely if this doesn't fall in a test year? The Company asserts that neither of these choices is balanced, and that normalizing these costs and spreading them equitably over the life of the investment provides a superior solution for both the Company and its customers.

Q. What are you requesting in this proceeding for Missouri-American Water?

A. We are requesting that Missouri-American be granted the authority to account for off-premise cloud-based technology solutions the same way it accounts for on-premise technology solutions. This would mean that the Company would capitalize implementation services, internal labor, and other fees (such as those for licenses,

maintenance and support) that were necessary to bring the asset into service. We recommend that a five-year amortization be used for assets like this and that they be recorded to NARUC account 303, intangible plant, for ease of tracking and identification.

Q. How does this impact the revenue requirement in this proceeding?

A. There is no revenue requirement impact in this proceeding related to SuccessFactors Employee Central and other planned cloud computing projects like it. The Company made neither an expense nor a rate base adjustment to reflect cloud based project spend. For example, SuccessFactors Employee Central is planned to begin in 2018, so if the Company had adjusted for this expense, it could have meant an expense increase of approximately $450,000 or more (15% of the $3.2 million expensable). Or, if the company had adjusted rate base for the entire project (15% x $3.5 million) it could have added approximately $500,000 of rate base, but would have had a far smaller customer impact, with the costs limited to a return on the investment plus an amortization of approximately $100,000.

Q. Does this conclude your direct testimony?

A. Yes, it does.