BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of a Working Case to Consider	)	
Proposals to create a Revenue Decoupling	)	File No. AW-2015-0282
Mechanism for Utilities.	)	

MAWC COMMENTS CONCERNING NOTICE

COMES NOW Missouri-American Water Company ("Missouri-American," "MAWC," or "Company") and, provides the following comments in regard to the Missouri Public Service Commission's (Commission) Notice Scheduling Workshop and Requesting Responses (Notice):

INTRODUCTION

Missouri-American appreciates the opportunity to discuss with the Commission and other interested parties a way to improve the ratemaking process in Missouri through the adoption of a revenue decoupling mechanism.

Although improving water efficiency,[1] energy efficiency and conservation are increasingly viewed as essential elements of public policy, under current rate structures, water utilities are rewarded for selling more water – the antithesis of the efficiency and conservation ethic. A revenue stabilization mechanism, or "RSM," is a regulatory tool that has been adopted in many states for gas, electric and water utilities. Rather than implicitly encouraging water use and penalizing a water utility for encouraging conservation, an RSM adjusts rates periodically to ensure that a utility's revenue will be sufficient to cover its fixed costs regardless of throughput, while providing an incentive for customers to use water more efficiently.

In addition to promoting the more efficient use of resources, an RSM effectively reduces the contentiousness of the (ratemaking) process used to determine the appropriate level of revenue upon which to set rates. The overall result is a more efficient and effective ratemaking process and better alignment of stakeholders' interests to provide for more economically and environmentally efficient resource decisions.

THE CHALLENGES

- Water Utilities Cost and Revenue Structure (the Throughput Incentive)

[1] Improving water efficiency means using improved practices and technologies to deliver water service more efficiently.

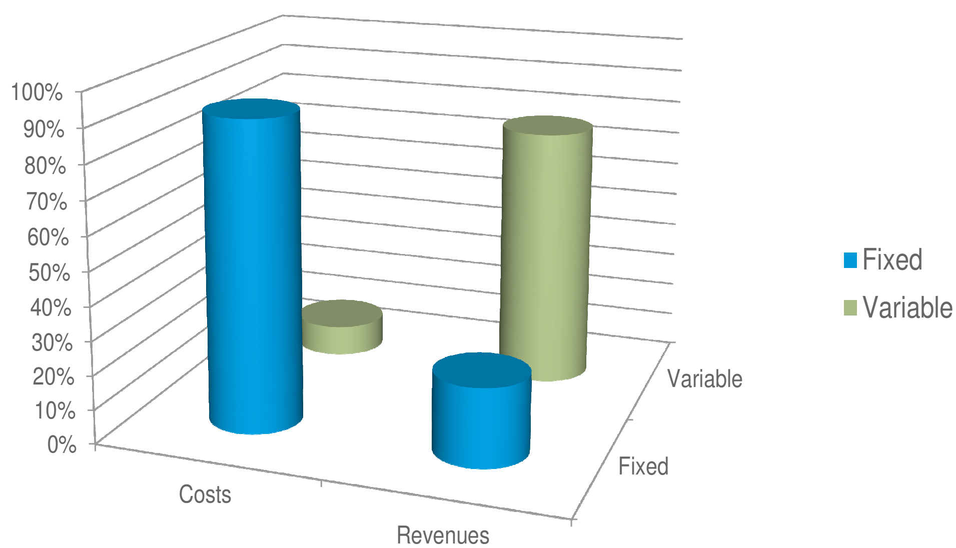
- Weather Variability
- Declining Use Per Customer

Water Utilities Cost and Revenue Structure - The Throughput Incentive

A water utility's business consists predominantly of fixed costs that do not vary with usage. Water utilities operate their source of supply, treatment and transmission and distribution systems to provide water service to a customer's premises whether that customer uses a minimal amount of water or more per month. Water utilities must be ready to provide and deliver water to customers if and when called upon. In order to do so, water utilities maintain a significant infrastructure to provide and deliver water to customers, to provide customer service, to administer accounting and billing systems and to provide other critical internal and external services. Such fixed costs cannot be avoided in the water industry.

Under the traditional ratemaking structure, a utility's revenues result from the combination of its customer accounts and its Commission-approved rate schedules. Missouri-American's current schedule of water rates includes a customer charge that varies with meter size serving the customer's premises and usage charges based on the quantity of water purchased.

The charts below show, rather starkly, that most of MAWC's costs to provide water service are fixed costs, while most of its revenues are variable. Approximately 91% of the Company's costs are fixed, and only 9% of Missouri-American's costs are variable. Approximately 23% of its revenues are fixed (including fire protection and miscellaneous revenues), while approximately 77% of its revenues are variable. The Company therefore relies heavily (68%) on its variable (or volumetric) revenues for collecting its fixed costs.



Missouri-American	Costs	Revenues	Variance
Fixed	91%	23%	- 68%
Variable	9%	77%	+ 68%

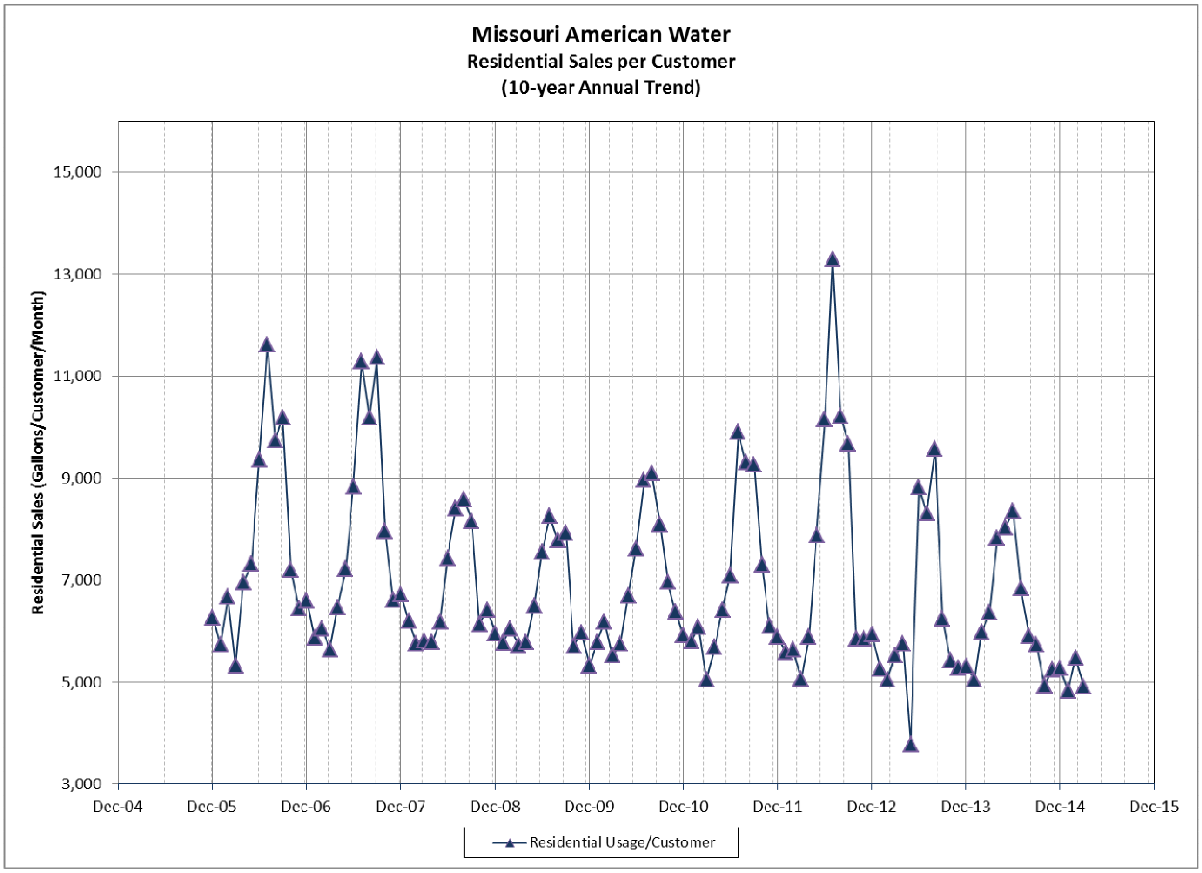
Because the Company is so dependent on volumetric sales for revenue, it is incented to sell more water and penalized if it promotes the more efficient use of resources. More than three-fourths of Missouri American's revenues come from volumetric sales -- more sales, more revenues; fewer sales, fewer revenues. This rate design creates a "throughput incentive": the more water customers use, the more revenue the Missouri-American collects and, to the extent this revenue exceeds variable costs, the better its financial performance.

Weather Variability

Weather creates fluctuations in water use, resulting in costs and revenues that are outside the utility's control. As a general rule, water use increases during hot, dry weather and decreases during cool, wet weather (primarily in the summer months) although the variation is regionally influenced, as well. The chart below demonstrates the variation in water usage that, in part, results from the variability of weather.[2]

[2] The summer of 2012 was the 4th warmest, 7th driest July on record over a 118 year period.

Table 1

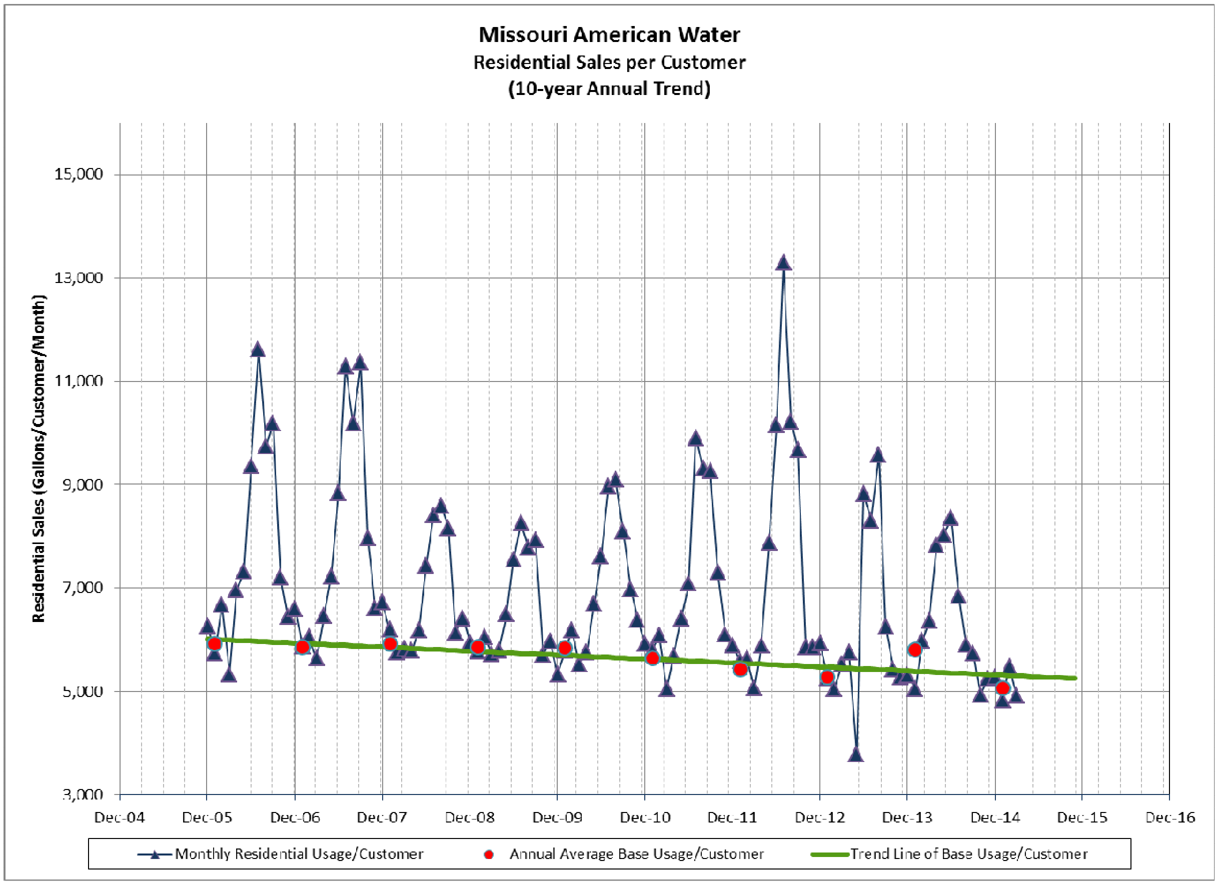


The ratemaking process has historically tried to take the variability of weather into consideration by basing rates on "normal" weather conditions. In fact, "weather" is difficult to define in a statistical sense, and establishing "normal" weather is even more difficult. In the water industry, there has never been a consistent definition of "weather" that has been adopted for weather normalization purposes or a generally accepted weather normalization adjustment methodology. Weather has never been satisfactorily addressed through existing ratemaking models for water companies because, even if properly "normalized," actual weather is never "normal." The result is that water companies receive either too little or too much revenue due to the vagaries of weather. 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.

Declining Water Use Per Customer

In addition to weather variability, the table below also shows something else. Despite weather variability, people in Missouri are using less water. Missouri-American's residential use per customer is steadily declining by as much as 2.0% annually.

Table 2



Missouri American's experience is consistent with a national trend of declining water usage per customer.[3] Whether through simple daily conservation efforts, government mandated water efficiency standards or the installation of more water efficient products such as efficient washers, toilets and the like, our customers have found ways to decrease water use in their homes and businesses.[4]

Reduced water sales and the resulting reduction in revenues has had a significant adverse financial impact on Missouri-American. With the exception of 2012,[5] MAWC has

[3] According to the 2010 Water Research Foundation report, "A pervasive decline in household consumption has been determined at the national and regional levels." Coomes, Paul et al., *North America Residential Water Usage Trends Since 1992* – Project #4031. In addition, within the American Water system, it has become clear that the declining water use trend experienced by MAWC is similar to the trends in other states.

[4] See **Appendix A** for a summary of the impact of the Energy Policy and Conservation Act of 1992 and 2005 that mandated the manufacture of water efficient toilets, showerheads and faucet fixtures; the Energy Independence & Security Act of 2007 established stringent efficiency standards for dishwashers and clothes washers; and the voluntary programs including (WaterSense and EnergyStar) that encourage conserving water and energy.

[5] According to NOAA/NCDC, the summer of 2012 was the 4th driest summer and the warmest summer

collected less than its authorized revenues each year from 2005 to 2014. In the face of this persistent and significant declining customer use and falling revenue, some continue to insist that the decline in sales is temporary, and the resultant revenue projections often continue to fail to adequately reflect the declining use. Despite overwhelming evidence that water sales per customer are steadily declining, some even argue that sales will increase and that, as a result, the requested rate increase can be reduced or eliminated to the extent that new sales provide the additional revenue. This is extremely unlikely to happen in the face of increasingly efficient appliances, water-saving devices, and policy initiatives that encourage efficiency. Ultimately, these arguments are fueled by the existing ratemaking structure that fails to align the stakeholders' interests. If we proceed from the notion that a utility should be entitled to recover its prudently incurred fixed costs, then there are no serious arguments against an RSM that reconciles actual revenues to the level forecasted as necessary to recover those costs.

THE RATEMAKING IMPACT

- How does an RSM work?
- Reducing the Contentiousness, Complexity and Frequency of Rate Cases
- The Impact of Alternative Ratemaking Approaches on Cost of Equity

How does Missouri-American's proposed RSM work?

An RSM is a regulatory mechanism that separates (or "decouples") a utility's cost recovery from the amount of water it sells. There are several revenue decoupling approaches to consider within the Commission's authority.

Missouri-American's proposed RSM will allow water and wastewater utilities to collect revenues based on the regulatory determined revenue requirement. The RSM adjusts rates periodically to ensure that the amount a utility books as revenue for cost recovery is no more and no less than the amount of revenue authorized by the Commission for the utility's cost of service. On a periodic basis, revenues are "trued-up" to the predetermined revenue requirement using an automatic rate adjustment. Missouri-American's proposed RSM would apply to residential, commercial, sale for resale, and other public authority customer classes. Industrial customers would be excluded.

One way to implement an RSM would be to track actual revenues against the Commission authorized revenue requirement during the period between general rate cases (netting under- and over-collections against each other) and to defer the balance for recovery or credit through amortizations in the utility's future general rate case.[6] A preferred method of implementing an RSM would be to track actual revenues against the Commission authorized revenue requirement and to surcharge or credit the revenue surplus or shortfall in the subsequent rate year.[7] An RSM could operate more frequently

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since 1895.

[6] This is the RSM method originally proposed by MAWC in Commission File No. WX-2015-0209.

[7] Attached as **Appendix B** is a more complete description of MAWC's Preferred Revenue Stabilization

(e.g., quarterly) to the extent the Company's revenue requirement is established by month for the rate year.

The Company believes that this Commission currently has tools available to it that will allow it to lawfully decouple revenues from volumes sold and to implement an RSM that would periodically adjust revenues in between rate cases.[8] A decoupling mechanism that adjusts revenues between rate cases will merely deliver the same revenue requirement that has been found by the Commission to be just and reasonable. Accordingly, there is no change in the revenues the utility is permitted to collect and no change in the relationship in the underlying cost factors.

Missouri-American's proposed RSM would not otherwise affect the existing design of customer utility rates. So in the case of Missouri-American customers, the price that a customer pays for water service would still be tied to the amount of water the customer consumes. The Company further proposes that RSM customer credits be divided equally by the number of customers in the rate classification, and surcharges applied based on the customer volumetric charges within the rate classification. Such a rate design provides incentive for customers to use water more efficiently because of the volumetric price signals.[9]

Reducing the Contentiousness, Complexity and Frequency of Rate Cases

A revenue stabilization mechanism can improve the ratemaking process by reducing the contentiousness, complexity, and frequency of rate cases. Once the utility's total revenue target is set, the sales volume debates become largely irrelevant because any sales volume errors are trued up. This benefits customers in a couple of ways. First, the savings from less-costly rate proceedings will be passed on to the customers. Second, it allows the parties involved in the case to focus upon the issues that are pertinent to providing quality service.

One of the more controversial aspects of many rate cases is the forecast level of utility sales during the year the new rates will be in effect. As a ratemaking tool, an RSM will effectively reduce or even eliminate the contentiousness related to the process of determining the water volumes used to set water rates. If the total revenue target is set directly, the sales volume debates become largely irrelevant because any errors are trued up. If, on the other hand, the allowed revenue level per customer approach is used, then the problem shifts from determining water sales to determining the number of customers and use per customer. The latter approach is likely to reduce but not eliminate the controversy.

A revenue stabilization mechanism that allows for periodic adjustments (credits and surcharges) in between rate cases should also reduce rate case frequency, resulting

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Mechanism.

[8] Attached as **Appendix C** is MAWC's review of statutory authority and common law supporting the Commission's use of decoupling measures and alternative rate mechanisms.

[9] An examples of the potential customer impact of the MAWC's preferred RSM is attached as **Appendix D**.

in increased rates for customers, when necessary, on a more gradual basis. Under current ratemaking, in an environment of falling sales, a company will suffer earnings erosion in between rate cases that will prompt the filing of more frequent rate cases. With the implementation of an RSM that allows for adjustments between rate cases, the Company will not need to file to recover revenue shortfalls in an environment of falling sales. On the other hand, when the Company does experience sales growth, it will credit the revenue in excess of the authorized amount. So customers should benefit from both a reduction in contentious issues in rate cases as well as a reduction in the frequency of rate cases.[10]

The Impact of Alternative Ratemaking Approaches on Cost of Equity

The presence of alternative ratemaking approaches such as revenue decoupling, riders, trackers, or forecast test periods raises the question as to whether such mechanisms reduce a utility company's financial or business risk, and to what extent a utility company's authorized return on equity ("ROE") should be reduced, if at all. While adjustment clauses, riders, and cost tracking mechanisms may mitigate (on an absolute basis but not on a relative basis) a portion of the risk and uncertainty related to the day-to-day operations, there are other significant factors to consider that work in the reverse direction, for example the weakening of the economy, declining customer water usage, and the Company's dependence on a significant capital spending program requiring external financing. In other words, alternative ratemaking approaches constitute responses to other risks that have heightened or appeared.

A recent comprehensive study by the Brattle Group investigated the impact of revenue decoupling on risk and the cost of capital and found that its effect on risk and cost of capital, if any, is undetectable statistically.[11] A number of commissions addressing the ROE issue have noted the absence of empirical evidence regarding how, if at all, an RSM impacts a utility's business risk. This absence of evidence is not surprising since investors generally do not associate specific increments to their return requirements with specific rate structures. Rather, investors tend to look at the totality of regulatory and ratemaking approaches in place relative to those in place at comparable companies when

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[10] At its 2013 annual meeting, the National Association of Regulatory Utility Commissioners ("NARUC") adopted a resolution that supports consideration of alternative recovery mechanisms for water and wastewater utilities and identifies the following benefits:

> 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.

Resolution Endorsing Consideration of Alternative Regulation that Supports Capital Investment in the 21st Century for Water and Wastewater Utilities - Sponsored by the Committee on Water, Recommended by the NARUC Board of Directors November 19, 2013, Adopted by the NARUC Committee of the Whole November 20, 2013. (Attached as Petitioner's Exhibit AJD-3)

[11] Wharton, Vilbert, Goldberg & Brown, *The Impact of Decoupling on the Cost of Capital: An Empirical Investigation*, The Brattle Group, February 2011.

assessing risk. In other words, the impact of ratemaking mechanisms such as decoupling is already reflected in the capital market data of the comparable companies.[12]

The risk impact of an RSM would be on a utility's risk from weather variability or failure to meet sales forecasts. In fact, an element of business risk addressed by an RSM is the chance that cooler, wetter weather will result in a revenue level that is lower than the authorized level. However, the empirical evidence demonstrates that revenue decoupling adjustments are both surcharges for under-collections of revenues for fixed costs and credits of over-collections of revenues. In the credit situation, the utility has foregone the opportunity to collect more revenue than the amount authorized in its last general rate case. While opponents of decoupling tend to testify extensively about the risk reduction associated with the possibility of surcharges to adjust for under-collection of expenses, acknowledgements of lost opportunities associated with possible credits are far more infrequent. In essence, a company is surrendering some upside revenue potential associated with weather conditions that result in a higher-than-expected level of sales in exchange for some downside protection against the potential that weather conditions will cause lower-than-expected sales. As a general rule in ratemaking, a well-run utility should experience higher earnings than one that is more poorly operated. With weather, however, a water utility's earnings are affected by the mere caprice of the influence of weather on revenue. It seems counter-intuitive for a poorly run utility to experience higher earnings due to hot weather or an efficient utility to suffer an earnings shortfall from cool weather. A RSM eliminates that anomaly.

Another element of risk that an RSM could affect is the failure to meet sales forecasts. It is reasonable to assume that the revenue forecast upon which rates are based is the revenue forecast that the commission believes is most likely to represent the utility's actual revenue. If a utility is consistently failing to meet its revenue forecast – likely because the revenue forecast does not properly account for water efficiency gains and conservation – then that is a shortcoming of regulation that needs to be corrected and not an element of risk for which there needs to be a cost of equity adjustment. An RSM would simply provide MAWC with the ability to collect the revenue that the Commission found to be appropriate.

Alternative ratemaking approaches such as Straight-Fixed Variable ("SFV") rate design and revenue decoupling mechanisms do not necessarily reduce risk on a relative basis, as compared to other utilities. Alternative ratemaking approaches have become the norm for regulated utilities across the United States. The approval of adjustment clauses, riders, trackers, forward test years, and cost recovery mechanisms by regulatory commissions is widespread in the utility business and is already largely embedded in financial data, such as stock prices, bond rating and business risk scores. For example, in Missouri-American's current rate case, the water companies in MAWC's proxy group have approved RSMs and other alternative ratemaking approaches that are not currently available to MAWC. As a result, the impact of these alternative ratemaking approaches is

[12] Direct Testimony of Roger A. Morin, PhD, on behalf of Missouri-American Water, Company Case No.: WR-2015-0301, SR-2015-0302 pp. 65-72 (July 31, 2015).

already reflected in the capital market data of proxy group companies. Since the proxy group includes utilities with RSMs and other alternative ratemaking approaches, any corresponding risk reduction and ROE impact is already reflected in the cost of common equity derived for the companies in the proxy group for MAWC. Consequently, any downward adjustment to MAWC's cost of common equity to capture the impact of an RSM would be redundant and would overstate the degree to which business risk has been reduced by the RSM. For all of these reasons, there is no basis to apply a downward adjustment to MAWC's cost of common equity in the event that the Commission approves the adoption of an RSM.

Ultimately, to the extent that a variety of alternative ratemaking approaches including RSMs have been adopted in the vast majority of states, it is reasonable to conclude that the market-required cost of common equity for water utilities already incorporates the impact of any risk-mitigation attributable to RSMs. Investors are aware that alternative regulatory mechanisms such as an RSM have been approved to help mitigate the variability of weather and declining customer consumption, and such information is already taken into account by the market.

<u>The Opportunity</u>

Just as many in this state and across the country are expressing increasing interest in energy and water efficiency and conservation as the least-cost investment, MAWC's current rate structure creates disincentives for a water utility to promote end-use efficiency because revenues are directly tied to water throughput. To counter this "throughput incentive," a number of public utility regulatory commissions have adopted alternative ratemaking approaches intended to align their utilities' financial interests with efficiency, sustainability and conservation programs. Water utility regulation in Missouri may be significantly improved by the adoption of an RSM that has the potential to provide a Win/Win/Win for customers, environment, and society in general by:

- Aligning Stakeholders' Interests (State of Missouri, Customers, Companies)
- Removing barriers to Capital Investment and Efforts to Improve Efficiency
- Supporting local economies through capital investment and job creation
- Environmental Benefits of Improving Water and Energy Efficiency

Aligning Stakeholders' Interests

Under current rate-setting practice, water efficiency investments by a utility cause a loss of profits. This is the case because MAWC's current rate setting is premised entirely upon the expectation that profits are earned through sales. The regulatory mechanics which give rise to this expectation are that a water utility's revenue requirement, as determined at the end of a rate case, is divided by its units of expected sales to set rates. It is through volumetric sales that most of MAWC's revenues are collected: more sales, more revenues; fewer sales, fewer revenues. Conservationists, for their part, have decried the fact that the traditional profit incentive for utilities inherent in the coupling of earnings to the "spinning meters" hurts wider energy and water efficiency and conservation efforts.[13] This throughput incentive also seems to run counter to regulatory policy that seeks to encourage efficiency and good environmental stewardship. There are a number of revenue stabilization measures used by this Commission and other regulatory commissions to counter this throughput incentive. Some of these measures provide nearly the same benefits to utility shareholders as Missouri-American's proposed RSM. However, all of them fall short of the full range of benefits that an RSM provides, especially for customers and the environment.[14]

An RSM will make water companies indifferent to selling less water and will mitigate the adverse effect of declining consumption and weather variability on revenues. An RSM also will help ensure that the Company receives the authorized revenue, no more and no less, and customers would pay the appropriate price for water service in their monthly/quarterly bills, whether collected through the fixed service charge or the volumetric charges.

Promoting water efficiency is the preferred way to meet the water and wastewater needs of all Missouri residents and businesses at the least cost and with the greatest reliability, environmental and efficiency benefits. Improving water efficiency is a "win/win/win" providing a wide range of benefits—for consumers, utilities, businesses, and for communities as a whole. Approving an RSM opens the path to achieving that winning combination.

[13] If efficiency and conservation are seen as good things, then removing the barrier to a utility's promotion of efficiency and conservation must also be a good thing.

[14] For example: (1) ***Declining use adjustment*** - Why isn't a declining use adjustment enough? Even though the calculated revenue requirement may have taken planned efficiency or conservation activity into account at the time rates were set, it's one and done - it's only for the first year rates are in effect - there is no mechanism offsetting continuing revenue declines in between rate cases and once rates are set the fundamental sales-yields-revenues relationship (throughput incentive) continues to incentivize a utility to maximize sales in order to maximize revenue. (2) ***Straight Fixed/Variable rate design*** - where payment for utility service is not based primarily on volumetric sales shifts more of the cost of service to lower water use customers and to lower income customers (not the same) and doesn't provide an incentive to utility companies or customers to improve water efficiency. (3) ***Weather Normalization Clause*** - uses degree days to measure weather variability for the gas and electric industry is a weather-only adjustment that does not address lost sales due to either utility efficiency programs or consumer funded efficiency, and therefore does not eliminate a utility's throughput incentive. (4) ***Lost margin mechanism*** - provides recovery to the utility for distribution margin that is lost when customers participate in the utility-sponsored energy efficiency programs but does not eliminate the utility's throughput incentive.

Removing Barriers to Capital Investment and Efforts to Improve Efficiency

Revenue, driven by declining use per customer is decreasing, while the nature of water utility investment has shifted largely from plant needed for serving new customers to non-revenue producing investments (e.g., water efficiency investments, aging infrastructure replacement and compliance with environmental regulations). The need to recover a rate of return on these significant investments, however, does not vary with usage. The current ratemaking structure is simply not well adapted to a no growth, high investment utility environment and is unlikely to encourage the necessary future investment to improve water efficiency. Utilities forego earnings when they invest in efficiency efforts, yet significant efficiency investments are likely to be a necessary component of a least-cost mix of resources.

Missouri-American Water is engaged in a broad array of efforts to become more efficient, and an RSM supports more consistent planning and deployment of the most efficient resources. Just as prudent energy efficiency investments are the least-cost investments in energy resources, improving water efficiency reduces operating costs (e.g., energy, treatment and residuals handling/storage costs) and reduces the need to develop new supplies and expand our water infrastructure. The task of aligning investors' interest with least-cost planning is paramount. Ultimately, it is customers who will benefit from an RSM because it allows water utilities to anticipate a consistency of regulatory oversight necessary to attract capital, properly matches cost incurrence with cost recovery, and supports more consistent planning and deployment of the most efficient resources.

Supporting Local Economies through Capital Investment and Job Creation

The water utility industry is historically the most capital intensive of the utility industries, and it is expected to incur significant capital expenditure needs over the next 20 years.[15] Those investments aren't for new growth from increasing consumption or a population boom on the horizon. The nature of water utility investment has shifted largely from plant needed for serving new customers to non-revenue producing programs and investments to maintain and improve service reliability – e.g., infrastructure replacement and repair and technology – which also supports job creation in local economies. Water

[15] The U.S. Environmental Protection Agency's (EPA's) national assessment of public water system infrastructure needs shows a total twenty-year capital improvement need of $384.2 billion. For Missouri, the 20-year reported need in 2011 increased to $8.48 billion. An evident gap exists between the required $8.48 billion capital investment for improving Missouri's water systems and the funding provided by federal and state SRF programs. Simply put, capital infrastructure investment is inadequate to fund both current and future public drinking water system needs. See also, Clean Watersheds Needs Survey (CWNS), which is a comprehensive assessment of needs to meet the water quality and water-related public health goals of the Clean Water Act (CWA). States and EPA conduct the CWNS every four years under CWA Section 516 (b). Missouri's documented needs total approximately $5.2 billion in 2008.
http://www.infrastructurereportcard.org/missouri/missouri-overview/;
http://water.epa.gov/infrastructure/drinkingwater/dwns/index.cfm;
http://water.epa.gov/scitech/datait/databases/cwns/2008reportdata.cfm

and wastewater utilities are an integral part of Missouri's infrastructure investment solutions. Jobs in water utilities are accessible to workers with a range of educational and training backgrounds, and offer opportunities for workforce development and advancement. Every million dollars of investment in water utility infrastructure generates over 20 jobs.[16] With over a third of the current workforce at water utilities eligible for retirement, there is an excellent opportunity to connect people to quality jobs.

Environmental Benefits of Improving Water and Energy Efficiency

Water and wastewater utilities are engaged in a broad array of efforts to become more efficient. Efforts to improve water and energy efficiency cover a wide range and include supply-side practices, such as improved pump efficiency, meter reading, leak detection, and infrastructure replacement and repair programs, as well as demand-side strategies, such as customer efficiency and public education programs and supportive rate designs that improve water and energy efficiency.

Missouri has a unique opportunity to benefit from and to further the many efficiency gains that can be realized from the water-energy nexus.[17] Working with stakeholders to realize these benefits would help Missouri achieve energy and water policy initiatives while equipping utilities with the means of providing customers with better, more reliable and more affordable services.

Improving water and energy efficiency provides a wide range of benefits—for consumers, businesses, utilities, and for communities as a whole. Just as prudent energy efficiency investments are the least-cost investments in energy resources, improving water efficiency reduces the need to develop new supplies and expand water infrastructure and reduces operating costs (e.g., energy, treatment and residuals handling and storage costs). It also reduces withdrawals from limited freshwater supplies, leaving more water for future use and improving the ambient water quality and aquatic habitat.

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[16] Metro Water Infrastructure Partnership reports that every $1 million investment in water infrastructure generates 20 jobs and $2.3 million to the St. Louis Region. metrowaterinfrastructurepartnership.org/. The United States Conference of Mayors estimates that a $1 billion investment in water infrastructure creates over 26,000 jobs nationwide. http://www.usmayors.org/resolutions/82nd_Conference/env09.asp.

[17] The amount of electricity used by water utilities to collect, treat, and move water is considerable, accounting for about four percent of the electricity consumed in the U.S. On the other side of the nexus, energy companies are large consumers of water. As observed in a recent report, "In 2005, the nation's thermoelectric power plants—which boil water to create steam, which in turn drives turbines to produce electricity—withdrew as much water as farms did, and more than four times as much as all U.S. residences." In addition, increased use of natural gas as a fuel replacement for coal in power plants across the country implicates even more water use as, overall, hydraulic fracturing "water requirement[s] may range from 70 to 140 billion gallons. This is equivalent to the total amount of water used each year in roughly 40 to 80 cities with a population of 50,000 or about 1 to 2 cities of 2.5 million people." http://www.ucsusa.org/sites/default/files/attach/2014/08/ew3-freshwater-use-by-us-power-plants-exec-sum.pdf

CONCLUSION

Under the current ratemaking structure, variability in weather and customer usage patterns can have a substantial effect on the Company's actual revenues. Changes in customer usage patterns can reflect seasonal variation in usage (e.g., from winter to summer) as well as long term water use trends (e.g., from sustained water efficiency and conservation efforts). This is true for Missouri-American as well as other water utilities in the State of Missouri and throughout the United States. The rate structure, which worked reasonably well in the 20th Century for water and wastewater utilities, no longer adequately addresses the challenges of today and tomorrow. The current rate structure is not well adapted to a no growth, high investment utility environment and is unlikely to encourage the necessary future investment in infrastructure replacement and efficiency.

The RSM is a ratemaking mechanism to address current realities. If the Company projects too great a decline and sales volumes remain higher than forecasted, the Company will credit the over-collection of the revenues; conversely, if an adjustment to recognize the declining usage is not adopted and revenues decline, then the Company would recover the shortfall through the RSM.

A revenue stabilization mechanism makes water companies indifferent to selling less water, 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. The result is a better alignment of stakeholders' interests to provide for more economically and environmentally efficient resource decisions. Implementation of this alternative regulatory mechanism will remove a disincentive to promote water efficiency and will support revenues for continued water efficiency investments. It provides the appropriate framework to work collaboratively toward promoting water and energy efficiency and 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.

WHEREFORE, MAWC respectfully requests that the Staff and the Commission consider the above comments.

Respectfully submitted,

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ATTORNEYS FOR MISSOURI-AMERICAN WATER COMPANY

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was sent by electronic mail or by U.S. Mail, postage prepaid, on September 1, 2015, to the following:

Office of the General Counsel	Office of the Public Counsel
Governor Office Building	Governor Office Building
staffcounselservice@psc.mo.gov	opcservice@ded.mo.gov

APPENDIX A

Flow rates from typical fixtures and appliances before and after federal standards

Type of Use	Pre-Regulatory Flow[18]	New Standard (maximum)	Federal Standard	Year Effective	WaterSense / ENERGY STAR Current Specification[19] (maximum)
Toilets	3.5 gpf	1.6 gpf	U.S. Energy Policy Act	1994	**1.28 gpf**
Clothes washers[20]	41 gpl (14.6 WF)	Estimated 26.6 gpl (9.5 WF)	Energy Independence & Security Act of 2007	2011	**Estimated 16.8 gpl (6.0 WF)**
Showers	2.75 gpm	2.5 gpm	U.S. Energy Policy Act	1994	**2.0 gpm**
Faucets[21]	2.75 gpm	2.5 gpm (1.5 gpm)	U.S. Energy Policy Act	1994	**1.5 gpm at 60 psi**
Dishwashers	14.0 gpc	6.5 gpc for standard; 4.5 gpc for compact	Energy Independence & Security Act of 2007	2010	**4.25 gpc for standard; 3.5 gpc for compact**

gpcd gallons per capita per day
gpf gallons per flush
gpl gallons per load
gpm gallons per minute
gpc gallons per cycle
WF water factor, or gallons per cycle per cubic feet capacity of the washer (the smaller the water factor, the more water efficient the clothes washer)

Daily indoor per capita water use from various fixtures and appliances in a typical single family home before and after Federal Regulations

Type of Use	Pre-Regulatory Standards		Post-Regulatory Standards		Savings
	Amount[22] (gpcd)	Percent of Total	Amount[16] (gpcd)	Percent of Total	
Toilets	17.9	30.4%	8.2	21.4%	54%
Clothes washers[23]	15	25.5%	9.8	25.6%	35%
Showers	9.7	16.5%	8.8	23.0%	9%
Faucets	14.9	25.3%	10.8	28.2%	28%
Dishwashers[17]	1.4	2.4%	0.65	1.7%	54%
Total Indoor Water Use	**58.9**	**100%**	**38.3**	**100%**	**35%**
Note: List only includes common household fixtures and appliances and excludes leaks and "other domestic uses" in order to be conservative.					

* For calculations of amount in gpcd, refer to the calculation below.

[18] Source: Handbook of Water Use and Conservation, Amy Vickers, May 2001
[19] Source: http://www.epa.gov/watersense/ and http://www.energystar.gov websites
[20] Average estimated gallons per load and water factor (see calculations)
[21] Regulation maximum of 2.5 gpm at 80 psi, but lavatory faucets available at 1.5 gpm maximum (see calculations)
[22] Source: Handbook of Water Use and Conservation, Amy Vickers, May 2001
[23] Regulatory Standards effective in 2010 and 2011.

APPENDIX A (CONTINUED)

CALCULATIONS

Clothes washer (pre-regulatory):

Number of times clothes washer used everyday *	= 0.37 loads per day
Clothes washer water use rate range *	= 39 gpl to 43 gpl
Average water use rate	= **41 gpl**
Water usage per capita	= 41 gpl * 0.37 loads/day
	= **15 gpcd**
Water factor (WF) as gallons/cycle/cu. ft	= 41 gpl / 2.8 cu. ft (assuming capacity of an average washer to be 2.8 cu. ft, most washers range between 2.7 – 2.9 cu. ft)
	= **14.6**

Clothes washer (new standard):

Number of times clothes washer used everyday *	= 0.37 loads per day
New regulatory standard	= **9.5 WF**
	= 9.5 gallons/per cycle/cubic feet
	= **26.6 gpl** (Assuming capacity of an average washer to be 2.8 cu. ft, most washers range between 2.7 – 2.9 cu. ft)
Therefore, new usage per capita	= 26.6 gpl * 0.37 loads/day
	= **9.8 gpcd**

Dishwasher:

Number of times dishwasher used everyday*	= 0.10 times
New regulatory standard	= **6.5 gallons/per cycle** (for standard dishwashers only)
Therefore, new usage per capita	= 6.5 gallons/per cycle * 0.1
	= **0.65 gpcd**

Faucet:

Actual faucet flow during use*	= 67% rated flow
Rated flow*	= **1.5 gpm** to **2.5 gpm**
Frequency of faucet use*	= 8.1 min/day
Range of usage per capita	= 8.1 gpcd to 13.5 gpcd
Assume average of range for estimated gpcd	= **10.8 gpcd**