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Case No.:	WR-2015-0301

REBUTTAL TESTIMONY

OF

GEOFF MARKE

Submitted on Behalf of the Office of the Public Counsel

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2015-0301

OPC Exhibit No. 11
Date 3-21-16 Reporter TT
File No WR-2015-0301

February 19, 2016

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Missouri-American Water Company's Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas.	)))))	Case No. WR-2015-0301

AFFIDAVIT OF GEOFF MARKE

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Geoff Marke, of lawful age and being first duly sworn, deposes and states:

1. My name is Geoff Marke. I am a Regulatory Economist for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my rebuttal testimony.

3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.

Geoff Marke

Subscribed and sworn to me this 19th day of February 2016.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

JERENE A. BUCKMAN
My Commission Expires
August 23, 2017
Cole County
Commission #13754037

Jerene A. Buckman
Notary Public

My commission expires August 23, 2017.

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REBUTTAL TESTIMONY

OF

GEOFF MARKE

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2015-0301

I. INTRODUCTION

Q. Please state your name, title and business address.

A. Dr. Geoffrey Marke, Economist, Office of the Public Counsel (OPC or Public Counsel), P.O. Box 2230, Jefferson City, Missouri 65102.

Q. Are you the same Dr. Marke that filed direct testimony in WR-2015-0301?

A. I am.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of this rebuttal testimony is to respond to the rate design direct testimony regarding:

- Proposed District Consolidation
  - Company witness Paul R. Herbert and Karl A. McDermott
  - Missouri Public Service Commission Staff (Staff) witness James Busch
- Customer and Volumetric Charges
  - Division of Energy (DE) witness Martin Hyman
- Residential Usage
  - Company Witness Gregory P. Roach and Kevin H. Dunn
- Proposed Decoupling Mechanism
  - Company Witness Jeanne M. Tinsley
- Company's Response to Staff's Rate Design Report
  - Company Witnesses Scott W. Rungren, Paul R. Hebert and Gregory P. Roach

Q. Please state OPC's positions on the proposed district consolidation

A. OPC continues to maintain its original position that further consolidation of the water districts is not presently supported by the facts in this case. OPC is however in agreement with Staff's recommendation to discuss the consolidation of the sewer tariff outside of the constraints of the rate case and to leave all sewer rates at their current rate levels at this time.[1]

Q. Please state OPC's position on the residential customer and volumetric charges.

A. OPC supports DE's position to only collect "customer-related costs" through the customer charge and to recover service capacity and minimum consumption costs through the volumetric charge. OPC is also in support with the movement to a uniform rate design for residential ratepayers.

Q. Please state OPC's position on residential water usage.

A. OPC disagrees with the Company's methodology and assertions that naturally-occurring end-use water efficient measures[2] are driving a decline in non-discretionary water usage.

Q. Please state OPC's position on the proposed decoupling mechanism.

A. OPC opposes the Company's decoupling mechanism. The proposed mechanism is riddled with unanswered questions, incomplete information and is in violation of fundamental regulatory principles that the Commission has relied on for decades in determining just and reasonable rates. The Company's proposed decoupling mechanism will create customer confusion, magnify customer risk, increase rate volatility and produce at best, questionable benefits. Decoupling amounts to a ratepayer-backed cash hedge that creates near absolute certainty for the Company in the form of retroactive "alternative" ratemaking.

[1] WR-2015-0301 Direct Testimony James Busch p. 11, 15-16.
[2] Naturally-occurring end-use water efficient appliances are water appliances or water fixtures that have not been incentivized by a utility and are driven by federal efficiency appliance standards.

II. DISTRICT CONSOLIDATION

Q. Briefly state the Company's water district consolidation proposal.

A. The Company is proposing to further consolidate the current eight water districts into three. Its proposal centers on the averaging of prices across districts resulting in approximately 95% of ratepayers being in district 1. Attachment GM-1 provides the geographical locations as well as the overall residential customer account breakdown of those consolidations.

Q. Briefly state Staff's water district consolidation proposal.

A. Staff is also proposing to further consolidate the current eight water districts into three larger districts, but different than those proposed by MAWC. Staff's "hybrid" proposal is based largely on geographical considerations (i.e., consolidate districts that are located somewhat near St. Louis, St. Joseph or Joplin). Attachment GM-2 provides the geographical locations and the overall residential customer account breakdown of those consolidations.

A breakdown of MAWC, Staff and OPC's proposed districts as well as the size percentage of residential ratepayers in each are listed in Table 1.

Table 1: Percentage breakdown of residential ratepayers by proposed districts

MAWC		Staff		OPC	
District 1	95.3%	District 1	84%	St. Louis Metro	81.0%
District 2	4.4%	District 2	8%	St. Joseph	6.7%
District 3	0.28%	District 3	8%	Joplin	4.9%
				Jefferson City	2.1%
				Warrensburg	1.6%
				Platte	1.3%
				Mexico	1.0%
				District 8	1.4%

Q. Please provide an overview of the arguments made for further consolidation of the districts.

A. Between Company witnesses Herbert and McDermott and Staff witness Busch there are several shared but also singular arguments raised regarding further consolidation of the districts. These arguments and their respective source are listed in Table 2 for reference.

I will respond to each of these arguments in turn.

Table 2: Summary of Staff and Company arguments regarding consolidation of tariffs

Argument	MAWC (Hebert)	MAWC (McDermott)	Staff (Busch)
Rate Shock	✓	✓	✓
EPA Regulation	✓	✓	
Incentivize Acquisitions		✓	✓
Rate Case Expense		✓	✓
Simplify Corporate Costs	✓		✓
Similar Operations	✓		
Equivalent service—water	✓		
Economic growth		✓	
Consistent approach across utilities		✓	

Q. Company and Staff witnesses point to rate continuity or the mitigation of rate shock as a valid reason to further consolidate. Do you agree?

A. I do not agree based on the facts presented in this case. OPC has long maintained the positon that whenever possible, rate levels and rate design changes should be implemented without creating dramatic shifts in costs and benefits to individuals or groups. That being said, rate continuity is not the only ratemaking principle nor is it necessarily the most important. For example, there are the principles of cost causation as well as equity and efficiency. If rate

continuity is to be championed by the proponents of consolidation for purposes of this case, then it stands to reason that some district is subject to rate shock, and this change to districts is necessary to avoid that rate shock. However, neither Staff nor the Company has pointed to any specific district that requires this treatment. At this point, citing considerations of rate continuity as grounds for consolidation is not germane to this case. In addition, there are different methods to mitigate rate shock. Gradualism or the phasing-in of rates over a period of time as opposed to the spreading of district specific costs to MAWC's collective ratepayers can ease issues of rate shock without abandoning the principles of cost-causation.

Q. Both Company witnesses cited current and potential EPA regulations as reasons for further consolidation. Are these legitimate concerns?

A. They are not legitimate concerns based on the facts presented in this case. Similar to the arguments made regarding gradualism, the Company provided no evidence in which any existing district would benefit by consolidation due to current or pending EPA regulations. In fact, at this point, future environmental costs appear to be largely speculative with no immediate environmental costs expected to be accrued by the Company for any time in the near future.

The Company's own response to the Missouri Industrial Energy Consumers (MIEC) data request 2-0001 supports this position.[3] The Company responded that it did not have a list of projects for the next three years (see GM-3). This response is consistent with the MAWC's response to Staff data request 313 (see GM-4). In that data request, Staff requested a listing of all approved or proposed legislation and rules/regulations that MAWC was aware of that will or may have a material cost of service impact on MAWC over the next four years. The Company responded by citing the Missouri Clean Water Act Law (10 CSR 20-6.010) and the National Pollutant Discharge Elimination System permits, but concluded its response to this data request with "The cost impact is not expected to occur within the next five years." In

[3] MIEC DR 2-001 asked for a list of all projects that MAWC would be proposing to include in the Environmental Cost Adjustment Mechanism (ECAM), for the next three years.

sum, potential EPA regulations are not legitimate concerns that would presently justify the further consolidation of districts.

Q. Both parties believe that further consolidated efforts will incentivize the acquisition of struggling water systems. Is this true?

A. Yes, being able to spread out cost of service to all ratepayers while increasing rate base is an attractive option for the Company. However, further discussion is warranted on this point. Both the Company and Staff frame the acquisition issue as one in which consolidation would address the small struggling private water system problem. Staff takes it a step further and suggests that, "moving away from a strict DSP (district-specific-pricing) rate design philosophy will encourage not only MAWC, but other water and sewer utilities, to invest in Missouri."[4]

First, it is important to remember that there was already a considerable amount of district consolidation that occurred in the last rate case (from thirty to eight). Missouri clearly does not hold to a strict DSP rate design philosophy. Second, it is OPC's understanding that the current number of small, privately-owned water and wastewater companies in receivership is already historically small (only three companies with an approximate total of 500 customers). It hardly seems appropriate to abandon the rate-making principles of cost-causation and assume all of the inherent risks associated with that departure for a problem that appears to be improving. Third, given MAWC's large and diversified footprint, it is highly doubtful that approval of further consolidative efforts for MAWC will send the market signal to outside water and sewer utilities to invest in Missouri. On the contrary, it appears much more likely that such an approval would insulate MAWC from any potential competition by extending its monopolistic reach. As stated in my direct testimony, the aggressive acquisition of water and wastewater systems is part of the American Water business strategy[5,6] and the industry at

[4] WR-2015-0301 Direct Testimony of James A. Busch p. 9, 2-4.
[5] American Water 10-K (2015) p. 22
http://ir.amwater.com/Cache/29123208.PDF?Y=&O=PDF&D=&FID=27943982&T=&OSID=9&IID=4004387
[6] NASDAQ (2014) American Water hits 52-week high on strategic acquisitions.
http://www.nasdaq.com/article/american-water-hits-52-week-high-on-strategic-acquisitions-analyst-blog-cm382295

large.[7,8,9,10] At play here is not the small struggling private system, but the potential to acquire larger municipal systems which comprise the majority of customers in Missouri. A consolidated tariff pricing (CTP) design in this case would clearly gives MAWC a competitive advantage in the market place for future municipal acquisitions.

The potential privatization of public systems coupled with a decreased competitive environment from other private utilities or governmental entities as a result of a CTP design is a topic that is largely beyond the scope of this testimony, but it should not be lost in making an informed policy decision moving forward.

Q. Both parties suggest that rate case expense related to the class-cost-of-service (CCOS) study would be diminished through consolidation. Is this true?

A. The overall impact on rate case expense would be minimal even if one part of that expense (CCOS) was simplified. Consolidation does not eliminate the need to perform a CCOS even if it makes it less time-consuming. MAWC's last rate case was filed in 2011. This shows that customers are not financing successive rate cases. Moreover, of the three parties weighing in on this issue, OPC operates with the least amount of resources at its disposal. Far from being an unnecessary burden, a thorough CCOS is vital to informing the Commission on setting just and reasonable rates.

Q. Both parties argue that consolidation alleviates the need to be precise regarding the allocation of common costs. Do you agree?

A. Further consolidation would simplify the allocation of common costs across separate facilities. However, it also minimizes district-specific costs, distorts efficient price signals to customers, and increases the risk of overinvestment. The Commission is well aware that cost

[7] Erbentraut. J. (2016) There's a secret war being waged over your drinking water. *Huffington Post.* http://www.huffingtonpost.com/entry/water-privatization-why-you-should-care_us_5671cb10e4b0648fe301fab2
[8] Aqua America (2014) Aqua America growth strategy results in new water and wastewater acquisitions in Texas. http://ir.aquaamerica.com/releasedetail.cfm?ReleaseID=874126
[9] Interlandi, J. (2010) The race to buy up the world's water. *Newsweek.* http://www.newsweek.com/race-buy-worlds-water-73893
[10] Global Cleantech Center(2015) The US water sector on the verge of transformation. http://www.ey.com/Publication/vwLUAssets/Cleantech_Water_Whitepaper/$FILE/Cleantech-Water-Whitepaper.pdf

allocation is inexact; no single "correct" approach or method exists. Much depends on the criteria and level of transparent data and judgment used by the analysts. For example, commenting on the allocation of common costs among the various districts, MAWC witness Jeanne Tinsley states, that the Company allocated an annual amount of $20 per customer for all small districts with less than 3,000 customers. Mrs. Tinsley rationalizes this by stating:

> Since **smaller districts do not require the same level of service as a larger district**, we looked at a few small companies to determine the level of overhead costs they typically incur and use that as a basis for the $20 per customer allocation (emphasis added).[11]

Consider for a moment Mrs. Tinsley's argument within the context of this discussion. If MAWC asserts that smaller districts require fewer services and less corporate overhead, then it stands to reason that consolidating districts (i.e., creating larger districts) would increase services, raise corporate overhead and amplify rates for ratepayers.

The allocation of common costs will never be precise but the approaches utilized in this case (the Massachusetts Formula, etc...) by analysts are consistent with the methodology from the Water Rates Manuals published by the American Water Works Association (AWWA) and has been accepted by public utility regulators in the U.S. and Canada.

Minimizing the wide variations in costs in providing service to different districts because the allocation of common costs is imprecise should not be grounds for abandoning the principles of cost-causation. In fact, if rates were to be consolidated the Company may claim that there is little reason to maintain separate books and records for each system. The loss of operational and financial data as a result of consolidation could wipe out the ability to evaluate the performance of the Company's operations at the local level.

[11] WR-2015-0301 Direct Testimony of Jeanne M. Tinsley p. 14, 19-23.

Q. Company witness Hebert argues that each district has a pumping station, pipes and meters and that all districts operate from a central office in St. Louis; therefore, tariffs should be consolidated. Do you agree?

A. No, just because each district may have similar operational equipment should not be grounds for a complete departure from the regulatory principle of cost-causation. Costs associated with the treatment of St. Joseph's water are caused by ratepayers in St. Joseph, not ratepayers 400 miles away in St. Louis. With rare exceptions, residential water is consumed where it is withdrawn and to the extent possible, ratepayers should pay for the costs that they incur.

Q. Company witness Hebert also argues that consolidation is warranted because each of the districts provide the same service: water. Do you agree?

A. No, similar to Mr. Herbert's operations argument above, approving consolidation of non-contiguous districts based on equivalent service provided ignores the economic and engineering realities of what it takes to provide that service at a local level.

To illustrate the flaw in this logic, take Mr. Herbert's equivalent service assertion one step further and make the argument that all of American Water's subsidiaries operating in sixteen states should be consolidated because they all report to the same national headquartered office in New Jersey and that they all provide water to ratepayers. Clearly, no one is making that argument.

Q. Company witness McDermott argues that consolidation should be accepted because it will stimulate economic growth. Is this true?

A. OPC is unaware of (and would be surprised to find) any document or study that directly links consolidation of water utility tariffs with stimulated economic growth. Dr. McDermott makes this assertion without any support.

Q. Company witness McDermott also argues that consolidation should be accepted because gas and electric utilities have consolidated different areas. Do you agree?

A. No, water systems differ considerably from electric and gas for reasons expounded upon in my direct testimony. As an aside, there is one electric company in Missouri—KCP&L Greater Missouri Operations Company (GMO)—that has different rates for the two territories it "merged" in 2000 because of the cost and rate differentials of the predecessor companies of Aquila, Inc. and St. Joseph Light and Power Company.

Q. Are there any other additional comments you wish to make on this topic?

A. Yes, regarding Dr. McDermott's testimony, OPC has serious reservations about the appropriateness of procuring expensive services with ratepayer dollars from an outside consultant who provided essentially the same testimony that ratepayers financed previously in WR-2011-0337.

Omitting biographical information, only four of the twenty pages of written testimony were not printed in the last rate case.[12] Much of the information cited in those four pages is either from biased sources (three separate citations to an American Water whitepaper) or relies on information that even predates the 2011 case (a 2002 Congressional Budget Office report). The testimony makes no meaningful attempt to update information from the 2011 case and there is no specific support given for MAWC's three proposed districts in this case. Why a Company employee could not have adopted much of the direct testimony outlined in the 2011 case and why ratepayers should be left paying for literally the same testimony they have already paid for in rates these past four years is difficult to comprehend. OPC will take this into consideration when it provides its formal recommended level of rate case expense in its true-up filing.

[12] WR-2015-0301. Direct Testimony of Karl R. McDermott, p. 5 to p. 9, 5.

III. CUSTOMER AND VOLUMETRIC CHARGES

Q. Please explain DE's position?

A. DE witness Martin Hyman provides a two-part argument to the Company's proposed consolidated customer charge increase. First, he opposes any increase to the customer charges, preferring instead that the revenues be collected through the volumetric charge based on matters on equity and conservation. Second, he opposes the increase to the customer charge based on cost-of-service allocation principles, namely, the Company's inclusion of uncollectible accounts. Finally, although Mr. Hyman offers general support for the Company's proposed uniformed rates in principle; he cannot support the Company's proposed consolidation based on the inequitable impacts formerly independent districts would experience as seen in his bill frequency analysis.

Q. Does OPC agree with Mr. Hyman's arguments?

A. Yes. OPC has traditionally argued for greater customer control and management over their utility bills and this can be most effectively accomplished through a two-part tariff that only collects specific customer charges (meter, bills, etc.) in the customer charge. DE is correct in its arguments regarding the inappropriateness of including uncollectible accounts through the customer charge.

Mr. Hyman's conclusions about the inequitable effect the Company's proposed consolidation would have on ratepayers are consistent with my testimony and the testimony of OPC witness Ralph Smith. OPC also supports the uniform volumetric rate design, but prefer to do that by maintaining the current district-specific tariff designations. Mr. Hyman neither offered an alternative consolidation plan nor commented on the present designations in his testimony.

IV. RESIDENTIAL USAGE

Q. Please explain the Company's position?

A. Company witnesses Gregory P. Roach and Kevin H. Dunn argue that there is a continuing decline of water use across all MAWC districts, at various ranges, based on the ten-year sales and customer account information confined to the "winter months" of February, March and April.[13] Mr. Roach's testimony then expounds on the reasons behind this:

> This decline can be attributed to several key factors, including but not limited to: increasing prevalence of low flow (water efficient) plumbing fixtures and appliances within residential households, conservation efforts of the customers, conservation programs implemented by the federal government, state government, MAWC and other entities, and price elasticity.[14]

Q. Has OPC addressed this issue in previous testimony?

A. Yes, in part. In my direct testimony I proposed that the Commission consider opening a Rate Design docket specifically for MAWC in large part because it appears as though parties are operating with different data sets. To illustrate this, I attached Mr. Dunn's work papers as well as the work papers based on the Company's response to Staff data requests. I then highlighted every month, in each district (with the exception of St. Louis Metro) over a ten-year period in which the numbers for customer accounts and customer usage provided were different. The sheer volume of inconsistencies should concern all parties.

OPC witness Lena Mantle also discussed problems and inconsistencies with the usage and customer number information used by the Company in its direct case in her rebuttal testimony. She pointed out why these problems create flaws in the Company's revenue normalization adjustment and, given these problems, she provides a more reasonable

[13] See GM-5
[14] WR-2015-0301. Direct Testimony of Gregory P. Roach. p. 4, 14-17.

revenue normalization adjustment for the revenues from the Company's residential water classes.

This rebuttal testimony will also address the Company's data and will also comment on the Company's hypothesis of alleged decline in usage: naturally occurring water efficiency, government and Company-induced conservation programs, and price elasticity.

Q. Have you encountered billing and usage issues like this in other cases?

A. No, this case has been singularly challenging in that regard. Although, my work to date has primarily centered on electric and gas utilities, I was surprised at the lack of knowledge the Company (the largest investor-owned water utility in Missouri) had regarding its customers' usage. Apparently this is not that unusual for the industry as a whole as there are a number of articles and reports that speak to this problem. For example, according to the American Water Works Association (AWWA):

> Historically, the lack of consistent definition of terms and practices has complicated the water industry's ability to measure, standardize, and compare the utility performance. Even when precise definitions exist (e.g., population served), many utilities are challenged when asked to provide accurate numbers and rely instead on best available estimates.[15]

This sentiment is also echoed in the Water Research Foundation / US EPA paper that Mr. Roach cited in his testimony which states:

> Misclassification of residential customers within utility database - The water utility does not have a standardized methodology for customer billing classification. Academic researchers and industry officials acknowledge that most water companies group customers according to similar "use characteristics"—such as amount of water consumed,

[15]Dziegielewski, B. & J.C. Kiefer (2010) *American Water Works Association Journal*, http://www.hazenandsawyer.com/uploads/files/Journal_Article_Water_Use_and_Conservation_Metrics_and_Benchmarks.pdf

topographic constraints, and service type—rather than actual property use. This approach poses a problem when water consumption patterns are analyzed based on economic and demographic models.[16]

Q. Can you provide some examples of billing inconsistencies that could distort water usage?

A. Yes. MAWC's largest district, St. Louis Metro,[17] bills a large percentage of its customers on a quarterly basis while other districts receive a monthly bill. Work in behavioral economics suggests that the timing of payment will influence consumption patterns. In short, if you pay as you consume you will tend to purchase less of a product.[18]

An additional concern revolves around the three months selected by Mr. Dunn: February, March and April. Dunn chose these months because they represent "winter months" and will not include as much discretionary usage. The selection of these particular months at the exclusion of other months aside, Dunn's analysis could be problematic if St. Louis Metro's quarterly billing months are not February, March and April. If quarterly billing is conducted on a calendar year basis, Dunn's sample size of St. Louis Metro would include incomplete records on usage and accounts by omitting January from quarter one and May and June from quarter two.

Another significant inconsistency in billing and usage data applies to ratepayers who occupy multifamily dwellings. According to the Division of Energy's data request 1-217 (see GM-5), the Company's multifamily customers are not metered and are billed at a flat rate. Based on US Census data I provided in direct testimony, 22.75% of the housing in St. Louis County is

[16] Coomes P. et al. (2009) North America residential water usage trends since 1992. Water Research Foundation & US EPA http://usi.louisville.edu/wp-content/uploads/2014/12/AwwARF-edits-92809.pdf

[17] This designation contributes to the confusion regarding usage and customer numbers. This district may show up as St. Louis County or St. Louis Quarterly. Sometimes it includes St. Charles County and sometimes St. Charles County data is analyzed separately. A consistent definition of MAWC's St. Louis area customers would alleviate this problem.

[18] See Ariely, D. (2010) Predictably irrational, revised and expanded edition: The hidden forces that shape our decisions. & Dan Ariely's TED talk: Are we in control of our own decisions? https://www.ted.com/talks/dan_ariely_asks_are_we_in_control_of_our_own_decisions?language=en

multifamily housing. To be clear, there is no way to know how much water is being used in roughly a quarter of the ratepayers in the single largest county in MAWC's service area.

Q. Is it standard practice to look at only three months of consumption a year to determine base usage?

A. I cannot speak definitively to this standard in the industry, but in my cursory review of the literature I could not locate any examples of this outside of American Water affiliates. Even in those isolated examples it appears that the American Water Company standard for its other subsidies is to select four months instead of three.[19]

Q. Do you have any concerns with the three months selected?

A. Although I understand the argument, I do not agree that it is appropriate. First, the months by themselves do not appear to be "winter months." They are school months, however. While most people naturally select December or January as winter months, both months include periods where holiday breaks from work and especially school mean that residents would generally be home more often than usual. Academic research on water demand suggests that households with more occupants and children consume considerably more water on average than those that do not.[20,21]

Far from being conclusive, further scrutiny of MAWC's analysis suggests that there is nearly unlimited room to manipulate data, especially if one is predisposed to a specific outcome.

Q. Did the Company consider weather in its analysis of base usage?

A. No, it did not. Mr. Roach states that weather will impact water usage, but states that he did not attempt to control for that variable. This is also supported by the Company's response to MIEC data request 3-0012 (see GM-6) which states:

[19] See the 2014 Indiana American Water rate case 44450
[20] Chen, X. et al. (2015) A benchmarking model for household water consumption based on adaptive logic networks. *Computing and control for the water industry*. http://www.sciencedirect.com/science/article/pii/S1877705815026685
[21] Klein B. et al. (2006) Factors influencing residential water demand: A review of the literature. http://sciencepolicy.colorado.edu/admin/publication_files/2006.28.pdf

> Weather variations in usage were removed from the per customer usage data prior to analyzing for time-related cause of usage reduction.

Mr. Roach's testimony does state that MAWC witness Dunn performed a weather normalization analysis.

> Knowing that weather can be a factor influencing short-term customer usage patterns, MAWC witness Dunn performed an analysis which averages weather and, in effect, removes weather variations as a factor in predicting future usage. **The results of Mr. Dunn's analysis and mine align very closely.** This provides a high degree of confidence that the drivers described earlier in my testimony are the predominant causes of the decline in water consumption by MAWC residential customers (emphasis added).[22]

Q. Did Mr. Dunn weather normalize the data?

A. No. Mr. Dunn performed essentially the same analysis as Mr. Roach, albeit with a different set of data and without the benefit of adding a regression line as an attachment. There were no measures of actual or normal weather in his analysis either. Therefore, it is not surprising that the analysis of Mr. Roach and Mr. Dunn would align closely.

Q. Mr. Roach asserts that water usage is declining because of efficiency, conservation and price elasticity. Did the Company collect any data to support these assertions?

A. No, the Company's response to OPC data requests include:

- 2106 (see GM-7) there has been no MAWC specific end-use saturation studies performed in the last ten years;
- 2107 (see GM-8) there has been no MAWC specific customer water conservation studies performed in the last ten years;

[22] Ibid. p. 8, 18-23.

- 2108 (see GM-9) there have been no local government conservation policies that have gone into effect in MAWC's service territory since the last rate case;
- 2109 (see GM-10) there have been no state government conservation policies that have gone into effect in MAWC's service territory since the last rate case;
- 2110 (see GM-11) there have been no federal government conservation policies that have gone into effect in MAWC's service territory since the last rate case;
- 2040 (see GM-12) there have been no price elasticity studies.

Mr. Roach's entire argument on water efficient appliances centers on the knowledge of federal appliance standards, time and the isolation of three select months of metered residential data. He provided no analytical support of the impact of efficiency, conservation and price elasticity on the usage of MAWC's customer usage.

Q. Please comment on the federal efficiency standards.

A. Federal appliance efficiency standards set minimum energy efficiency levels. They remove the most inefficient products from the market while retaining consumer choice. Moreover, the enactment[23] and enforcement[24] of those standards has been inconsistent and has played out unevenly over multiple years. Even then, the adoption of energy efficient end-use measures varies widely across states largely based on state-mandated building codes, appliance standards or energy efficiency standards. A look at U.S. energy policy on a state-by-state basis in Figure 1 through 4 from the Center for Climate and Energy Solutions shows the wide variation of enacted policy across the nation.

[23] Tomich, J. (2013) Feds withdraw new furnace efficiency standards. St. Louis Post Dispatch. http://www.stltoday.com/business/local/feds-withdraw-new-furnace-efficiency-standards/article_7ccf47e4-2e7b-55a4-a1fc-6c301b7eec7f.html

[24] Dawson, K. (2013) US House blocks enforcement standards again. http://thehill.com/blogs/floor-action/house/310167-house-again-blocks-enforcement-of-light-bulb-standards

Figure 1: Energy Efficiency Standards and Targets:[25]

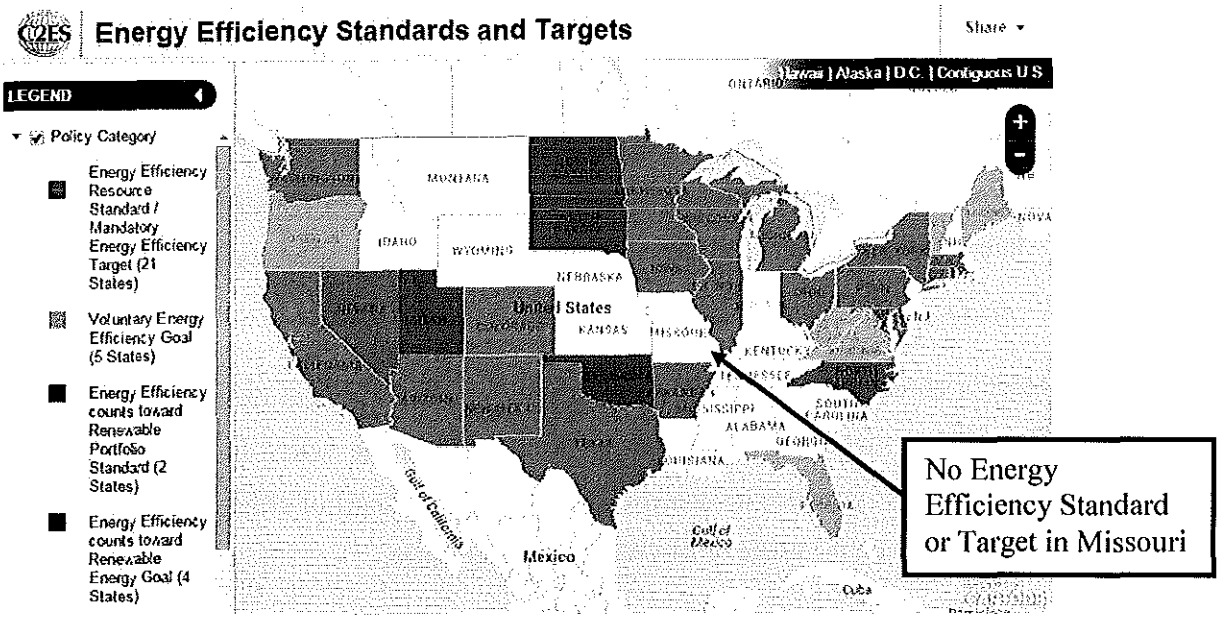
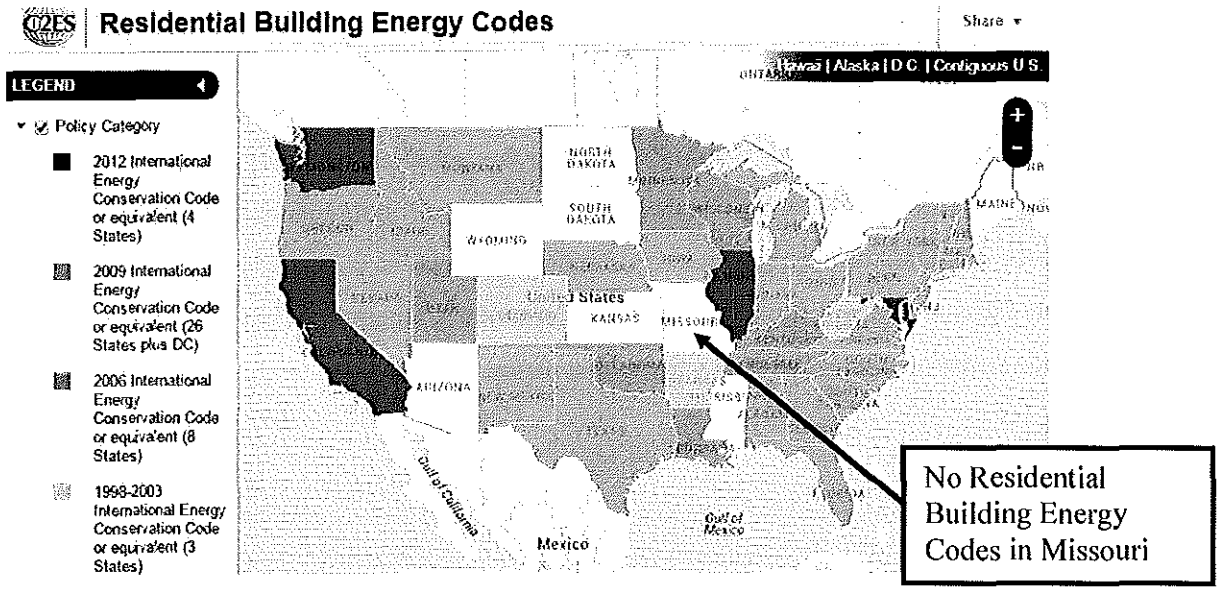


Figure 2: Residential Building Energy Codes:[26]



[25] Center for Climate and Energy Solutions: Energy efficiency standards and targets (2015) http://www.c2es.org/us-states-regions/policy-maps/energy-efficiency-standards

[26] Center for Climate and Energy Solutions: Residential building energy codes (2015) http://www.c2es.org/us-states-regions/policy-maps/residential-building-energy-codes

Figure 3: Commercial Building Energy Codes:[27]

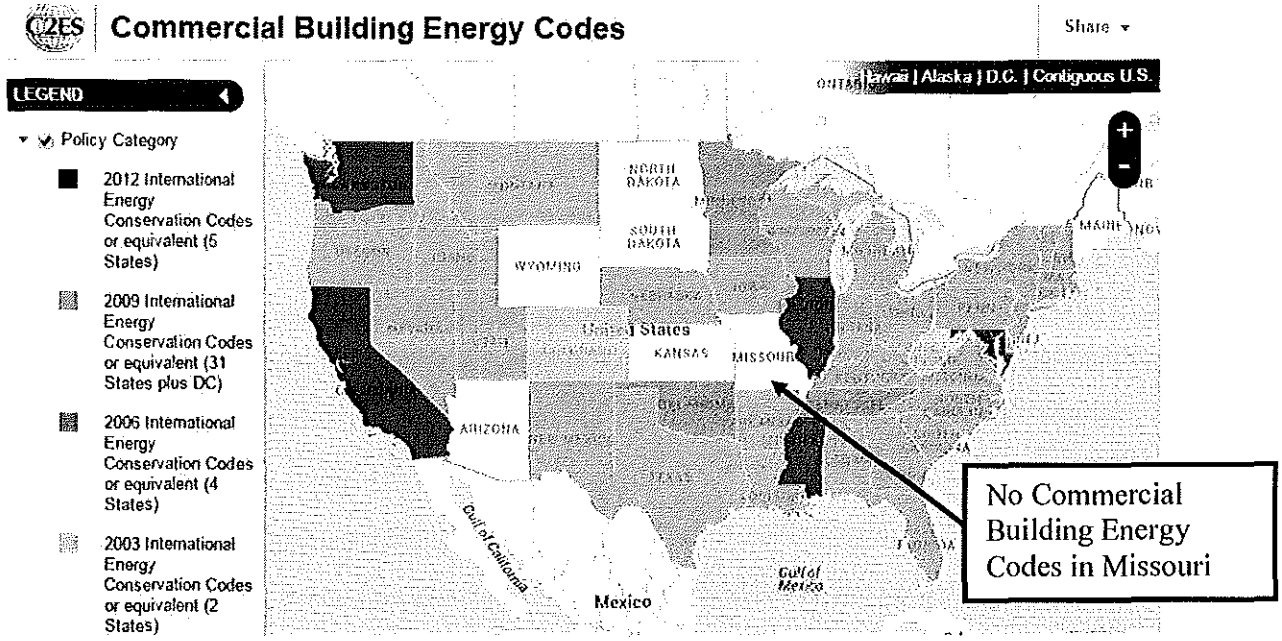


Figure 4: Appliance Efficiency Standards:[28]

[27] Center for Climate and Energy Solutions: Commercial building energy codes(2015) http://www.c2es.org/us-states-regions/policy-maps/commercial-building-energy-codes

[28] Center for Climate and Energy Solutions: Appliance efficiency standards (2015) http://www.c2es.org/us-states-regions/policy-maps/appliance-energy-efficiency

Figures 1 through 4 reveals that Missouri has no:

- Mandated Energy Efficiency Standards and Targets
- Residential Building Energy Codes
- Commercial Building Energy Codes
- Appliance Efficiency Standards

Only two other states—Kansas and Wyoming—share these characteristics. The fact that there are no state-specific building codes or appliance standards in place in Missouri should temper Mr. Roach's hypothesis that water efficient appliances are meaningfully influencing water usage.

In fact, according to the Alliance for Water Efficiency's 2012 state scorecard (a report that examined state laws and policies related to water efficiency and conservation), Missouri tied for last in the nation with Alabama, Louisiana, Mississippi, North Dakota, and Wyoming. The results of each state are reprinted from the report and shown in Table 3. Missouri's individual scoring results are also reprinted from the report and shown in Figure 5.

Table 3: AWE's water efficiency and conservation state scorecard results summary:

STATE	POINTS	GRADE
Alabama	2	D
Alaska	3	D
Arizona	23	B+
Arkansas	7	C-
California	29	A-
Colorado	16.5	B-
Connecticut	14	C+
Delaware	7	C-
Florida	11	C
Georgia	18.5	B
Hawaii	4	D
Idaho	3	D
Illinois	5	C-
Indiana	6	C-
Iowa	10.5	C
Kansas	10	C
Kentucky	13	C+
Louisiana	2	D
Maine	3	D
Maryland	7.5	C
Massachusetts	13	C+
Michigan	3	D
Minnesota	14.5	C+
Mississippi	2	D
Missouri	2	D

STATE	POINTS	GRADE
Montana	3	D
Nebraska	3	D
Nevada	17.5	B-
New Hampshire	17	B-
New Jersey	16.5	B-
New Mexico	14	C+
New York	11	C
North Carolina	11	C
North Dakota	2	D
Ohio	3.5	D
Oklahoma	3	D
Oregon	15.5	B-
Pennsylvania	3	D
Rhode Island	20	B
South Carolina	6.5	C-
South Dakota	4	D
Tennessee	4	D
Texas	29	A-
Utah	14	C+
Vermont	6	C-
Virginia	16.5	B-
Washington	21.5	B
West Virginia	4	D
Wisconsin	15.5	B-
Wyoming	2	D

Figure 5: AWE's water efficiency and conservation state scorecard results for Missouri:

Missouri Water Efficiency Scorecard Grade: D

QUESTION		ANSWER	NOTABLE DETAILS	POINTS
1.	State agency in charge of drinking water conservation?	Department of Natural Resources		1
2.	Water consumption regulation for toilets?	No		0
3.	Water consumption regulation for showerheads?	No		0
4.	Water consumption regulation for urinals?	No		0
5.	Water consumption regulation for clothes washers?	No		0
6.	Water consumption regulation for pre-rinse spray valves?	No		0
7.	Mandatory building or plumbing codes?	No		0
8.	Water loss regulation or policy?	No		0
9.	Conservation activities as part of water permitting process?	No		0
10.	Drought emergency plans required?	No		0
11.	Conservation planning required separate from drought plans?	No		0
12.	Authority to approve or reject conservation plans?	N/A		0
13.	How often are plans required?	N/A		0
14.	Planning framework or methodology?	N/A		0
15.	Implementation of conservation measures required?	N/A		0
16.	State funding for urban water conservation programs?	Yes		1
17.	Technical assistance for urban water conservation programs?	No		0
18.	Does the state require volumetric billing?	No		0
19.	Percent of publicly supplied connections that are metered?	N/A		0
20.	ET microclimate information for urban landscapes?	No		0
EXTRA CREDIT				0
		TOTAL		2

Q. Does Missouri provide state funding for urban water conservation programs?

A. Missouri does provide state funding for water conservation programs, but not specifically urban programs and not in a context that is relevant to this discussion. The Missouri Department of Natural Resources administers a grant program funded through the Parks, Soils and Water sales tax to help Missouri farmers with soil erosion by improving the state's water supply.[29] This state funded conservation program would have no impact on the residential water usage of MAWC customers. There have been no other state-funded water conservation programs of which OPC is aware.

[29] Missouri Department of Natural Resources (2015) The Parks, Soils and Water Sales Tax. Conserving Soil and Water for Future Generations http://dnr.mo.gov/pubs/pub2166.pdf

Q. Does Mr. Roach provide any secondary sources to substantiate his claim that declining residential water usage is pervasive across the nation because of efficient appliances?

A. He cites to a handful of studies throughout his testimony, but only two studies attempt to empirically verify the water savings induced from efficient appliances. The first is a 2010 Water Research Foundation Report in which Mr. Roach states:

> According to the 2010 Water Research Foundation ("WRF") report, "many water utilities across the United States and elsewhere are experiencing declining water sales among households." (WRF Report, p.1) The report further states: "A pervasive decline in household consumption has been determined at the national and regional levels." (WRF Report, p. xxviiii).[30]

And the second, an article from the AWWA in which Mr. Roach states:

> An article in the June 2012 issue of the AWWA Journal entitled "Insights into declining single-family residential water demands: states: "Reduced residential demand is a cornerstone of future urban water resource management. Great progress has been made in the last 15 years and the industry appears poised to realize further demand reductions in the future"[31]

Q. Have you reviewed these articles?

A. Yes, and they are not as favorable as Mr. Roach would have the Commission believe. First, it is telling that there have not been any more recent publications on this seemingly relevant topic. Even the scorecard report that I reference above is now four-years old and has not been updated. Second, it is exceedingly difficult to make generalizations about the impact of water efficient appliances on water usage because of the lack of a standardized methodology for billing and usage as well as the localized and government-centric characteristics inherent in

[30] WR-2015-0301 Direct Testimony of Gregory P. Roach p. 10, 3-7.
[31] Ibid. p. 11, 16-18 & p. 12, 1-2.

the water industry. For example, speaking to the problems of standardized classification and data management practices, the authors of the Water Research Foundation report state:

> Researchers faced difficulties in obtaining accurate data for measuring usage and identifying patterns. **Water-usage data obtained from utilities reflect information captured for billing and metering reason, not for analysis.** It is challenging to assemble consistent household water-usage data over time across utilities because of the lack of universal metering practices, a standardized method for classifying customers and maintaining databases. . .
>
> Though the water usage model developed for this study provides valuable insight into the detailed structure of residential water usage, **these models are still weak in explaining the huge variations in residential water usage among the participating utilities. For a utility to adequately understand the local factors influencing residential usage, it needs to conduct an in-depth demographic study of existing customers** (emphasis added).[32]

As an aside, it should be noted that the primary data utilized for this study was confined to only one water utility in Louisville, Kentucky.

Mr. Roach's second referenced study is a literature review of water efficient end-use studies from 2010 by authors William Deoreo and Peter Mayer of Aquacraft Inc. (a water engineering and management consulting firm that specializes in end-use analyses and evaluations of water conservation programs). I have reprinted the bibliography of that paper in Figure 6 to give a sense of the scope of empirical work that exists on this nation-wide trend.

[32] Coomes et al. (2009) North American residential water usage trends since 1992. Water Research Foundation. http://usi.louisville.edu/wp-content/uploads/2014/12/AwwARF-edits-92809.pdf

Figure 6: DeOreo and Mayer bibliography screenshot

DeOreo & Mayer | http://dx.doi.org/10.5942/jawwa.2012.104.0030
Journal - American Water Works Association
Peer-Reviewed

Consortium for Energy Efficiency, 2011. Clothes Washer Standards. www.cee1.org/resid/seha/rwsh/reswash_specs.pdf (accessed Apr. 18, 2012).

DeOreo, W.B., 2011a. Analysis of Water Use in New Single Family Homes. Aquacraft Inc., Boulder, Colo. www.aquacraft.com/sites/default/files/pub/DeOreo-%282011%29-Analysis-of-Water-Use-in-New-Single-Family-Homes.pdf (accessed Apr. 18, 2012).

DeOreo, W.B., 2011b. Report On In-Home Water Use Patterns In Single Family Homes From Jordan. Project Number 278-00-06-00329 Aquacraft Inc., Boulder, Colo. www.aquacraft.com/sites/default/files/pub/DeOreo-%282011%29-Report-on-in-Home-Water-Use-Patterns-in-Single-Family-Homes-from-Jordan.pdf (accessed Apr. 25, 2012).

DeOreo, W.B.; Mayer, P.W.; Martien, L.; Hayden, M.; Funk, A.; Kramer-Duffield, M.; & Davis, R., 2011. California Single-Family Water Use Efficiency Study. Aquacraft Inc., Boulder, Colo. www.aquacraft.com/sites/default/files/pub/DeOreo-%282011%29-California-Single-Family-Water-Use-Efficiency-Study.pdf (accessed Apr. 18, 2012).

DeOreo, W.B.; Dietemann, A.; Skeel, T.; Mayer, P.W.; Lewis, D.M.; & Smith, J., 2001. Retrofit Realities. *Jour. AWWA*, 93:3:58.

DeOreo, W.B.; Heaney, J.P.; & Mayer, P.W., 1996a. Flow Trace Analysis to Assess Water Use. *Jour. AWWA*, 88:1:79.

DeOreo, W.B.; Lander, P.; & Mayer, P.W., 1996b. New Approaches in Assessing Water Conservation Effectiveness. *Proc. Conserv96*, Orlando, Fla.

Heinrich, M., 2007. Water End-use and Efficiency Project (WEEP)—A Case Study. SB07 NZ Conference: Transforming our Build Environment, Auckland, New Zealand. www.branz.co.nz/cms_show_download.php?id=1007e939aa7e3b02ab6d012ca78d3c411f21098b (accessed Apr. 18, 2012).

Lewis, D.M.; DeOreo, W.; & Dinatale, K., 1998. Flow Trace Analysis to Determine Irrigation Efficiency in a Large Municipal Water User. Proc. AWWA 1998 Annual Conference and Exhibits, Dallas.

Loh, M. & Coghlan, P., 2003. Domestic Water Use Study in Perth, Western Australia, 1998–2001. Water Corporation, Perth, Australia. www.watercorporation.com.au/_files/PublicationsRegister/12/Domestic_water_use_study.pdf (accessed Apr. 18, 2012).

Mayer, P.W.; DeOreo, W.B.; Opitz, E.M.; Kiefer, J.C.; Davis, W.Y.; Dziegielewski, B.; Nelson, J.O., 1999. Residential End Uses of Water. Water Research Foundation. Denver. www.waterrf.org/ProjectsReports/PublicReportLibrary/RFR90731_1999_241A.pdf (accessed Apr. 19, 2012).

Roberts, P., 2005. Yarra Valley Water. 2004 Residential End Use Measurement Study. Melbourne, Australia. www.yvw.com.au/yvw/groups/public/documents/document/yvw1001680.pdf (accessed Apr. 18, 2012).

USDOE (US Department of Energy), 1992. Alternative Fuels & Advanced Vehicles Data Center. Federal & State Incentives & Laws. www.afdc.energy.gov/afdc/laws/key_legislation (accessed April 19, 2012).

Willis, R.; Stewart, R.A.; Panuwatwanich, K.; Capati, B.; & Giurco, D., 2009. Gold Coast Domestic Water End Use Study. Water, September 2009. Brisbane, Australia. www.manuelectronics.com.au/pdfs/WillisEtal2009goldcoastwater.pdf (accessed April 19, 2012).

There are fifteen sources referenced in the article.[33] Of those fifteen studies:

- Nine are from the authors of the article or their Company;
- Two are citing federal appliance standards, and thus, not studies;
- Four are from studies conducted in either Australia or New Zealand; and
- None were published after 2011.

As it stands, it appears research into this field is still very much in its infancy and it is premature to definitively state that water efficient appliances are altering the water usage landscape in the United States.

[33] There is one source on the previous page that references a 2005 Aquacraft study.

Q. Mr. Roach references price elasticity as the third component contributing to the decline in usage. What is price elasticity?

A. Price elasticity measures the responsiveness of customer usage to price changes. More precisely, price elasticity of water demand measures the sensitivity of water use relative to changes in the price of water, after controlling for the influence of other factors that can also alter water demand, such as income, weather, age of occupants, the economy, structure of house, number of occupants within a house, density of the development, etc.

The demand for a good is said to be elastic (or relatively elastic) when it is greater than one (in absolute value): that is, changes in price have a relatively large effect on the quantity of a good demanded. In contrast, a good is said to be inelastic when it is less than one: that is, less than the percentage change in price.[34]

In general, water is considered to be an inelastic good and not that responsive (at least in the short-term) to changes in price. However, there is a critical distinction between "inelastic demand" and demand which is "unresponsive to price." If demand is truly unresponsive to price, price elasticity is equal to zero, and the demand curve would be a vertical line – the same quantity of water will be demanded at any price. This may be true in theory, but it has not been observed for water demand more broadly in fifty years of empirical economic analysis.[35]

The price elasticity for water (or any good) will also vary across socio-demographic considerations. High-income households will generally be less sensitive to water price increases than low-income households.

Q. Was a price elasticity analysis performed?

No, as stated above in the referenced OPC data requests, no price elasticity analysis has been performed.

[34] Gallo, A. (2015) A refresher on price elasticity. Harvard Business Review. https://hbr.org/2015/08/a-refresher-on-price-elasticity

[35] Olmstead, S. (2006) Managing water demand: price vs. non-price programs. Pioneer Institute for Public Policy Research. http://s3.amazonaws.com/ebcne-web-content/fileadmin/misc/WaterPrice.pdf

Q. Do you believe past increases in MAWC's rates would have negatively impacted water usage?

A. I believe it is plausible, but my knowledge of the historical phenomenon as it relates to MAWC's customers extends only as far as the Company's at this point which has not been verified.

Q. Are there any other considerations that the Commission should be aware of regarding MAWC's analysis?

A. Yes. MAWC's ten-year, time-usage analysis does not acknowledge that the single largest economic downturn in our Nation's history since the Great Depression occurred during the Company's selected range. According to the U.S. Bureau of Labor and Statistics:[36]

- In December 2007, the national unemployment rate was 5.0 percent, and it had been at or below that rate for the previous 30 months. At the end of the recession, in June 2009, it was 9.5 percent.

- By the end of the recent recession, the U.S. unemployment rate was higher than the rates in most other industrialized countries.

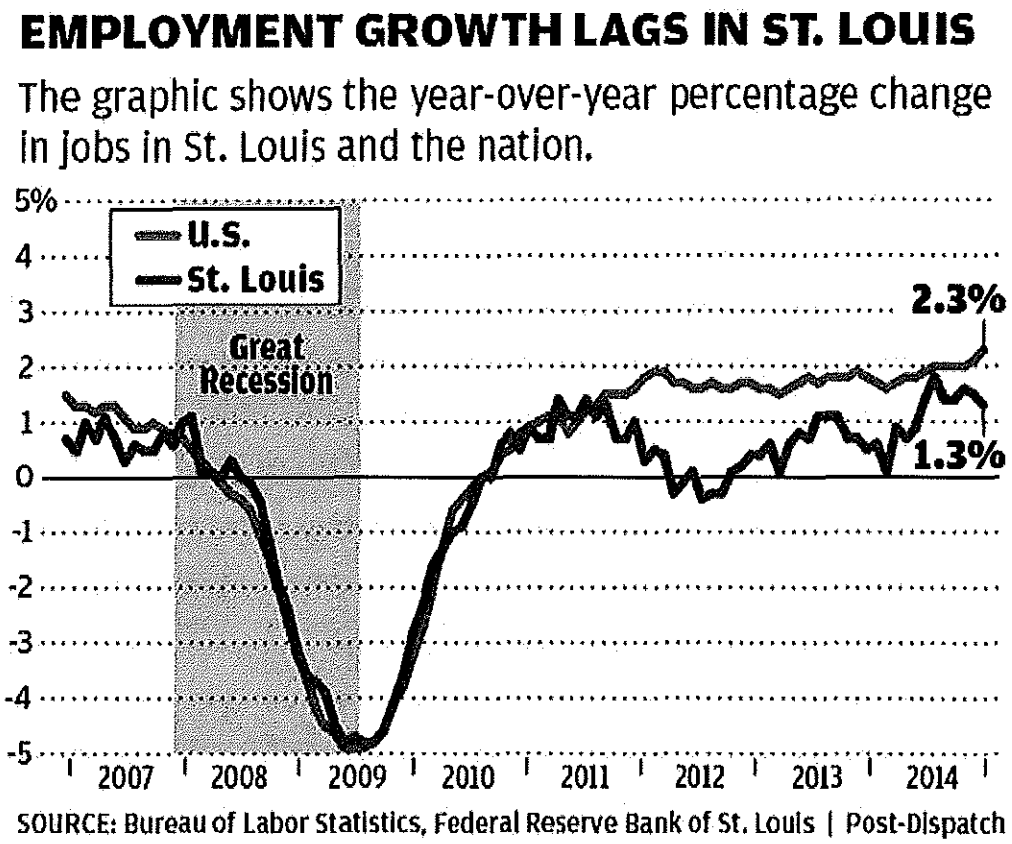
- The employment decline experienced during the December 2007–June 2009 recession was greater than that of any recession of recent decades.

- During the recession of 2007–2009, the increases in the wages and salaries of private industry employees slowed to 1.3 percent in December 2009 from a year earlier. This was far below the 3.6 percent increase from March 2006 to March 2007, after the recovery from the 2001 recession.

. Figure 7 is a graphical representation of the year-over-year percentage change in jobs in both St. Louis and the nation.

[36] U.S. Department of Labor (2012) Spotlight on Statistics. http://www.bls.gov/spotlight/2012/recession/audio.htm

Figure 7: Employment in St. Louis and the nation[37]



MAWC's decision to utilize a ten-year regression analysis (2006-2015) that only looks at time and is void of context omits the economic realities that MAWC ratepayers experienced. Note, that according to Figure 7, overall St. Louis employment experienced a second smaller decline in mid-2011 through 2012 relative to the rest of the nation's workforce.

Regression models produce a steeper decline which is reflected by a stronger R^2 when ten-years are considered as opposed to the last five-years.[38] For example, ten-year residential

[37] Gallagher, J. (2015) St. Louis has a jobs problem. St. Louis Post Dispatch. http://www.stltoday.com/business/local/st-louis-has-a-jobs-problem/article_fe9a7ae0-832c-590e-b14f-402541d7c96d.html

[38] The R^2 measures how close the data are to the fitted regression line. 0% indicates that the model explains none of the variability of the response data around its mean.

base usage and the trend line fit to that usage in St. Louis County can be seen Figure 8 which can be contrasted against the five-year residential base usage and the trend line to that usage in St. Louis County as seen in Figure 9 below:

Figure 8: St. Louis County residential ten-year residential base usage

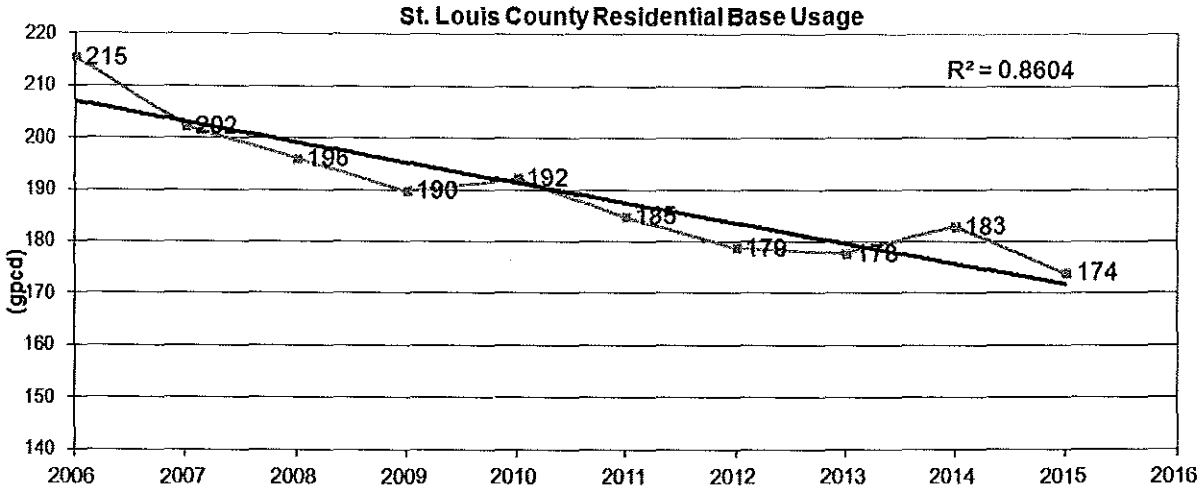
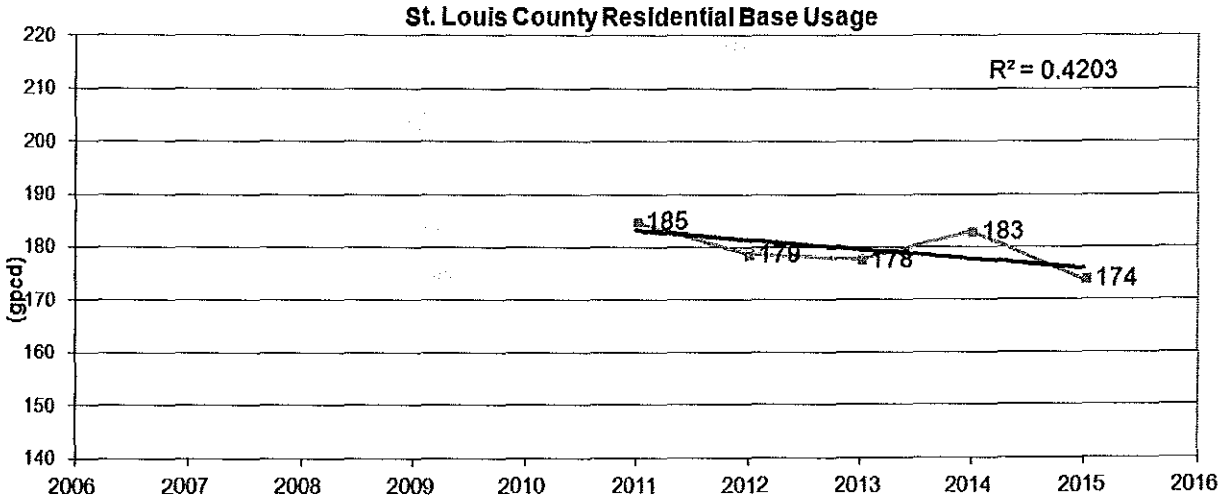


Figure 9: St. Louis County residential five-year residential base usage

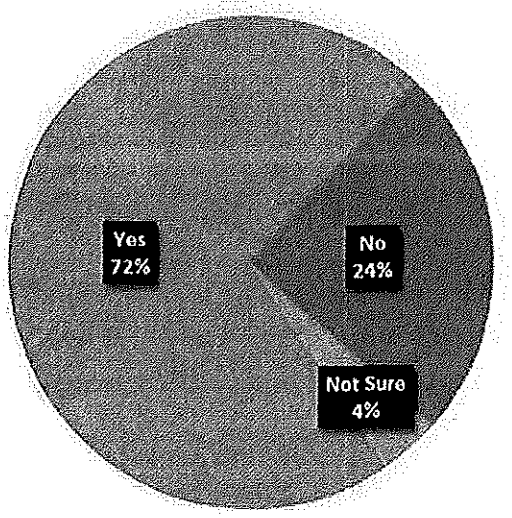


Not surprisingly, the most recent five-year trend regression line appears to be relatively flat with a much lower R^2. Among the many variables that Mr. Roach's model did not attempt to control—the Great Recession and the recovery from that recession is a fairly obvious one.

Based off of early survey results from 123 water utilities, the Water Research Foundation appears to support the assertion that the Great Recession had an impact on declining water usage.

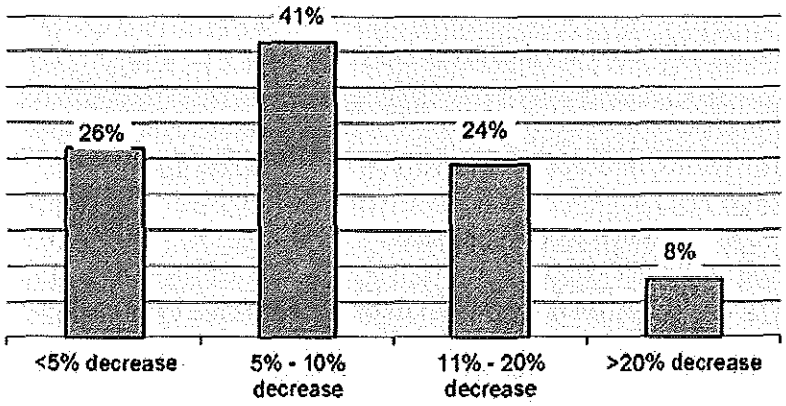
> The preliminary results of the water utility survey generally validates the notion that many water utilities, perhaps a majority nationally, experienced a decrease in the demand for water during the time periods corresponding with the Great Recession (Figure 1). Almost one-third of survey respondents experiencing declines in water use observed reductions of greater than 10 percent from pre-recession levels (Figure 2).[39]

Did total water use in your water utility service area decrease during the recent U.S. recession? (% of 123 respondents)



[39] The effects of economic shocks on water demand (2014) Water Current: Water Research Foundation E-Newsletter. http://www.waterrf.org/resources/NewsletterStories/The%20Effect%20of%20Economic%20Shocks%20on%20Water%20Demand.html

Magnitude of water demand decline during recent recession from pre-recession levels
(% of 87 respondents who answered question - 88 reported water use decline)



To be clear, I am not suggesting that the survey result numbers cited above from the preliminary Water Research Foundation analysis are reflective of MAWC's services. Clearly those numbers are looking at water usage that likely includes residential, commercial, agricultural, and industrial. The source is referenced merely to support my belief that water usage levels are likely interdependent with the health of the economy as a whole.

The probability that historically bad economic conditions likely negatively impacted water usage levels only further supports why it is more appropriate to look at the five-year trend line rather than the ten-year analysis that did not consider economic conditions as offered by the Company.

To reiterate OPC's rebuttal to the Company's argument on non-discretionary residential usage, the Company's regression line above in Figure 8 is only accounting for time and usage data for three select months for a ten-year period that included a period of economic downturn of historic proportions. There has been no attempt to weather normalize this data, no economic factors were included, nor have any price elasticity considerations been applied to the data points immediately following MAWC's last rate increase in 2012. The absence of these considerations in MAWC's usage analysis alone should give the Commission pause when considering the veracity of the Company's declining trend assertions. When all of the

collective reasons listed in this testimony are examined it seems highly unlikely that efficient toilets and showerheads are altering the water utility landscape in Missouri.

V. DECOUPLING MECHANISM

Q. Please explain the Company's proposal.

A. Company witness Tinsley requests that the Commission approve a revenue stabilization mechanism (RSM, or decoupling) based on the following arguments:

- Weather risk is eliminated
- Controversies over pro forma revenues are eliminated
- Reduction in the number of rate cases and the associated expenses
- Company is free to promote water efficiency
- The current cost of operating water systems are not being covered
- Long-term water use trends are downward for the Company
- Other utilities receive this form of ratemaking treatment

I have been advised by legal counsel that decoupling is not legally permissible in the State of Missouri. In addition, the Company has not fulfilled its burden by supporting how a decoupling mechanism for MAWC should be administered. There is no tariff filing as to exactly how this mechanism would work. In fact, Mrs. Tinsley's testimony speaks to the undefined nature of the Company's proposal:

> The production costs for the entire class would be divided by the pro forma water sales to determine a cost per thousand gallons. This cost per thousand would be multiplied by the water sales for that customer class, which is then allocated to monthly amounts to establish the monthly allowed amounts. **This could be accomplished by using a weighted average of water sales for**

residential customers, or revenues or water sales over a period of five years or another agreed amount of time (emphasis added).[40]

Putting aside the objections grounded on the legal permissibility of decoupling in Missouri and the failure to meet the burden of the minimum filing requirements of a proposed tariff, I will respond to each of Mrs. Tinsley's arguments in turn and provide further contextual support for OPC's opposition to decoupling for MAWC. OPC witness Michael P. Gorman has already provided direct testimony on the corresponding downward adjustment to ROE that should appropriately accompany any approved decoupling mechanism.

Q. Do you agree with Mrs. Tinsley that decoupling would eliminate the risk weather poses to the Company?

I would agree that full decoupling would guarantee revenue associated with extreme fluctuations in weather. Once the revenue requirement is determined, decoupling adjusts prices to maintain the allowed revenue requirement. Of course this reduction in risk should be accompanied by a corresponding reduction in ROE as the risk/reward opportunity for the Company is fundamentally altered. Moreover, details would matter in the design and implementation of this component. For example, the Company has produced testimony by at least three witnesses (Tinsley, Roach and Dunn) about MAWC's risk exposure to weather yet no attempt has been made to determine the actual sensitivity to weather and to weather normalize the revenue adjustment in this case. In short, Mrs. Tinsley references Mr. Roach,[41] Mr. Roach references Mr. Dunn[42] and Mr. Dunn informs us that weather is difficult to define.[43] It is difficult, if not impossible to conceptually support a mechanism that alleviates a risk of the Company and places that risk onto ratepayers without an equivalent reduction in potential reward. Even then, it is unclear what ratepayers (or the Company for that matter) stand to gain from this mechanism as it is cryptically presented.

[40] WR-2015-0301 Direct Testimony of Jeanne M. Tinsley p. 29, 3-8.
[41] Ibid. p. 17, 10-11.
[42] WR-2015-0301 Direct Testimony of Gregory P. Roach p. 8, 18-23.
[43] WR-2015-0301 Direct Testimony of Kevin H. Dunn p. 16, 5.

Q. Do you agree with Mrs. Tinsley that decoupling would eliminate controversies over pro forma revenues?

A. No, at least not as the Company has presently conducted business in this case. The evidence in this case suggests a lack of basic coordination within the Company and a lack of transparency with outside parties regarding the pro forma revenue calculation. It is unclear how a Commission-approved decoupling mechanism would alleviate this concern. In addition, during a rate case, the Commission considers all relevant factors to determine the rates that are just and reasonable by matching normalized costs and revenues over the same time period. Regular evaluation of all relevant factors through rate cases before this Commission is not necessarily a negative thing, indeed, it may give customers confidence in the rates they pay.

Q. Do you agree with Mrs. Tinsley's argument that the number of rate cases would decrease?

A. As stated earlier in this testimony, MAWC last filed for a rate case in 2011. It is also well known that the Company was required by law to file for this general rate proceeding within three years of the Commission approved Infrastructure System Replacement Surcharge (ISRS). The Environmental Cost Adjustment Mechanism (ECAM) statute also requires the utility to file a rate case within thirty-seven months of the approval of an ECAM. If the Commission finds against OPC's recommendation that the ISRS be discontinued and against OPC's recommendation that MAWC be granted an ECAM. Mrs. Tinsley's argument claiming a reduction in rate cases is not well founded.

Q. Do you agree with Mrs. Tinsley's argument that the Company would be able to promote water efficiency?

A. Yes, theoretically. However, this is ultimately a red herring argument. For reasons articulated throughout my revenue requirement rebuttal testimony, the promotion of water efficiency end-use measures through ratepayer backed funding is both extremely rare and has produced, at best, uncertain benefits. Moreover, it is well documented and was articulated at the

Commission's decoupling workshop in AW-2015-0282 that decoupling by itself only makes a Company indifferent to efficiency. It should be noted that the Company already provides a limited level of encouragement for water efficiency absent a decoupling mechanism (e.g., a link on their homepage for water saving strategies).[44]

Q. Do you agree with Mrs. Tinsley's argument that other utilities are receiving this treatment?

A. No, at least not utilities that look like MAWC. For reasons expanded upon in the attached memo in GM-13, MAWC would have the Commission believe that the Company is operationally, legislatively, and regulatorily analogous to a deregulated electric utility in a state with mandated energy efficiency requirement standards (EERS) and resource planning requirements. That is clearly not the case for MAWC. The State of Missouri does not have mandate water efficiency requirement standards and there are not resource planning requirements for MAWC. The Commission should evaluate the particular circumstances as it pertains to Missouri.

Q. Do you agree with Mrs. Tinsley's argument that long-term water usage trends are spiraling and will continue to spiral downward for the Company?

A. No, for reasons already articulated in this testimony.

Q. Do you agree with Mrs. Tinsley's argument that current costs of operating water systems are not being covered?

A. They are, in fact, being covered according to the Company's response to MIEC data request 3-0009 (see GM-14) and reprinted here for reference:

> Information requested:
>
> In the last 10 years, has MAWC ever been unable to pay its variable costs?
> In the last 10 years, has MAWC ever not collected enough customer

[44] Missouri American Water (2016) Wise Water Use. http://www.amwater.com/moaw/learning-center/wise-water-use.html

revenues to meet its depreciation expense? In the last 10 years, has MAWC ever been unable to pay its tax (Federal, State, payroll, property) obligations? In the last 10 years, has MAWC been able to recover all of the fixed costs included in the customer rates? If the answer is no, for any period of time in the last 10 years, for each such period of time, did MAW earn a positive return on investment? Provide all documentation supporting the responses to this data request.

Information provided:

MAWC has been able to pay these costs over the past 10 years (emphasis added).

Q. Do you have any further comments regarding the Company's proposed decoupling mechanism?

A. Yes, GM-13 includes additional comments related to decoupling that were filed in AW-2015-0282 regarding the literature filed in that docket, but which were not referenced in this case (with the sole exception of the Pamela Morgan article cited by Mrs. Tinsley).

The Commission should be cognizant that an approved decoupling mechanism would designate Missouri as an extreme outlier within the United States in terms of risk-reduced regulatory treatment. Only three states have approved such treatment according to Mrs. Tinsley: California, New York and Connecticut. The Commission needs to be aware that all three states:

- Are deregulated electric states
- Are legislatively required to meet Energy Efficiency Reduction Standards
- Have explicit water loss regulation or policy in place
- Require separate water conservation and drought planning requirements
- Incorporate inclining-block rates to encourage conservation

- Provide low-income assistance or specialized income-qualified rates

Missouri and MAWC ratepayers have none of those qualifications, conditions or protections. Furthermore, the Commission should note that MAWC is not:

- Proposing to deploy any water efficient or conservation programs
- Sponsoring any conservation-inducing rate designs
- Offering to subject itself to any integrated resource planning oversight
- Supporting any lifeline rates or additional assistance for those least able to pay

VI. COMPANY'S RESPONSE TO STAFF RATE DESIGN REPORT

Q. What did Company witness Paul R. Hebert offer in supplemental direct?

A. Mr. Hebert provides further support for his proposed increase in the customer charge—offering that

> With declining usage that the Company and many other water utilities across the country have experienced over the last 20 years, having a larger portion of the revenue recovered in fixed charges and putting less revenue in the variable rate would provide a more stable revenue stream for the Company which, I believe, is a benefit to both the Company and the customer.

He also acknowledges that inclining block rates have become more common but does not believe such a design is warranted because water supplies are sufficient throughout the Company's service area.

Q. Please respond.

A. I have already addressed OPC's objection to raising the customer charge and offered considerable evidence challenging the Company's position on declining usage. I would, however, like to offer an overall observation to Mr. Hebert's suggestion that inclining block

rates are not warranted given the sufficient level of local water supply in the Company's districts.

It is curious that the Company is simultaneously taking the position of supporting a uniform rate design with an almost across-the-board increase to the customer charge versus a revenue decoupling mechanism to purportedly promote conservation. Given the Company's Commission-directed response to Staff's rate design report as well as the lack of any filed tariff sheets supporting the decoupling mechanism it appears the Company is hedging its bets when it comes to rate design moving forward.

Q. What did Company witness Gregory P. Roach offer in supplemental direct?

A. Mr. Roach proposed that the Commission approve a modified future test year for consumption in this proceeding.

> I recommend that the Commission approve a modified future test year for consumption in this proceeding as a forecasted test year for consumption is in the best interest of both the rate payer and the stockholder providing a fix authorized level of revenue that insulates the rate payer from frequent rate cases and revenue requirement increases while providing the stockholder with an insured investment return.

Those modifications should be based on two considerations: 1.) the declining water usage from efficient water appliances; and 2.) discretionary outdoor water usage normalized for weather. He also spoke to the risks that the Company would be exposed to under a one-way tracker.

Q. Do you agree?

A. No. OPC opposes this suggestion, has written extensively on the merits of regulatory lag and the historical test year already (see OPC witness Charles R. Hyneman), and frankly cannot understand why the Company continues to offer incomplete proposals in this case.

I will let my earlier stated testimony speak to Mr. Roach's continued assertions regarding the proliferation of naturally occurring water efficient appliances.

Q. What did Company witness Scott W. Rungren offer in supplemental direct?

A. Mr. Rungren offers that approval of any alternative rate mechanism (decoupling, trackers, riders, ISRS, ECAM, etc) which reduces Company risk should not be accompanied by a reduction in ROE because Company witness Dr. Morin says alternative rate mechanisms are already embedded in financial data.

He also speaks to a Brattle Group whitepaper (attached to Rungren's testimony) that supports the Company's position. This report was also referenced in the decoupling workshop docket AW-2015-0282.

Q. Do you agree?

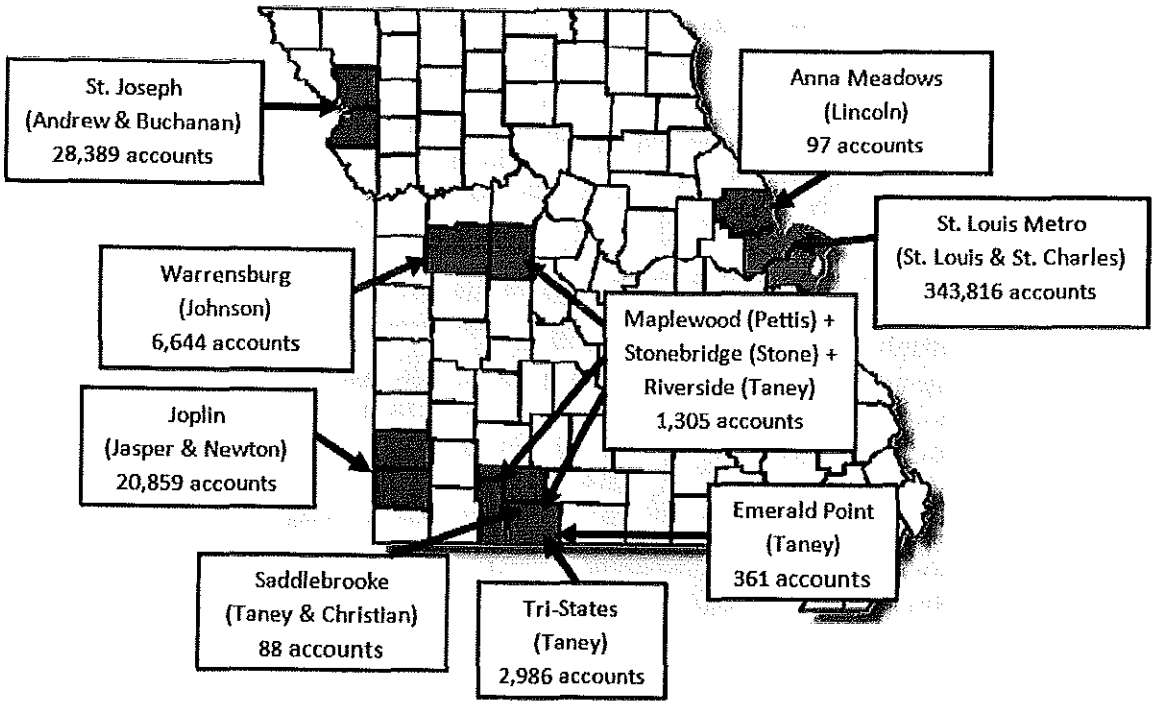
A. Similar to Mr. Rungren, I will defer to OPC's ROE witness Michael P. Gorman on the subject of risk and reward.

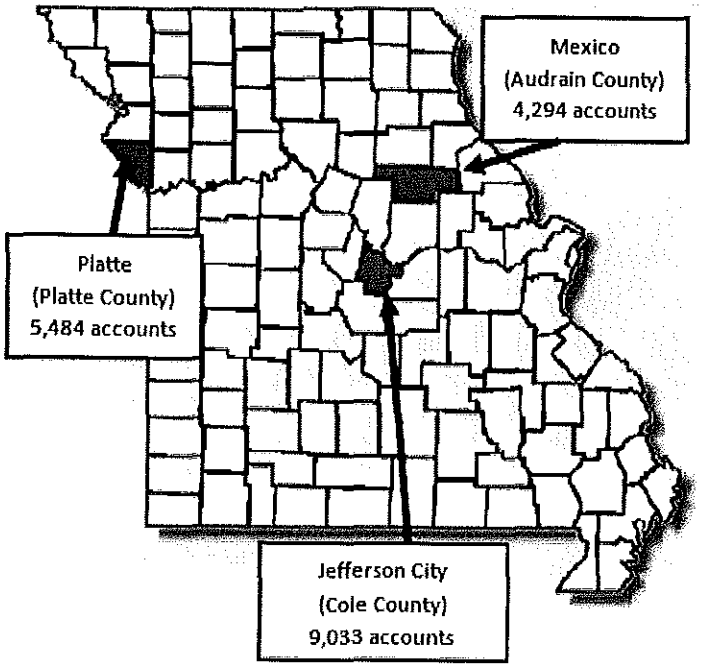
OPC has already opined on the limitations of the Brattle Group's whitepaper in the AW-2015-0282 case. Those remarks are included in GM-13 and OPC's position on the legality of retroactive ratemaking is included in GM-15 for reference.

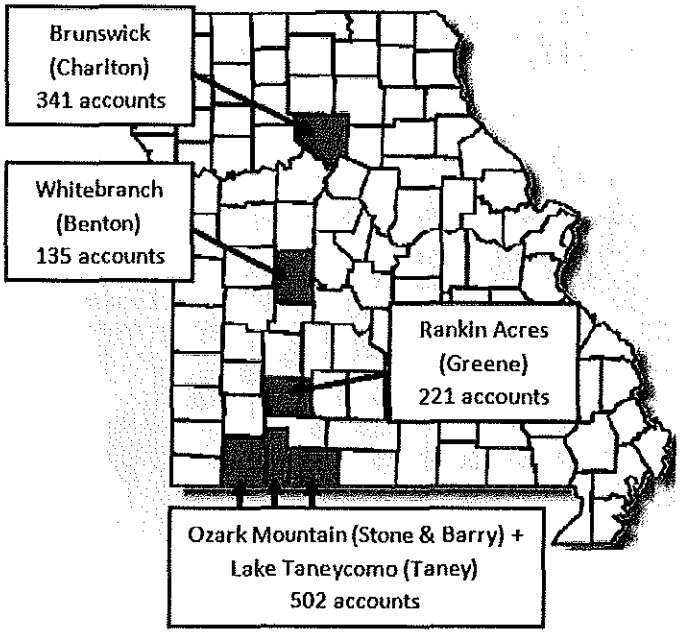
Q. Does this conclude your testimony?

A. Yes.

Company Proposed Districts

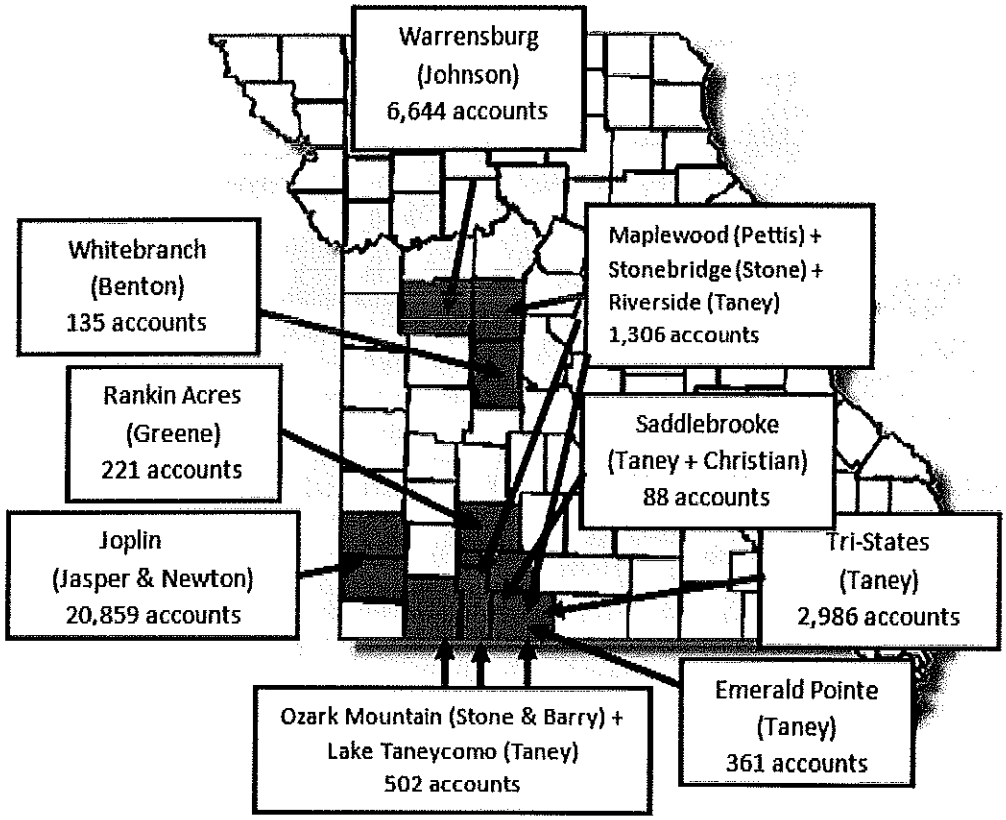


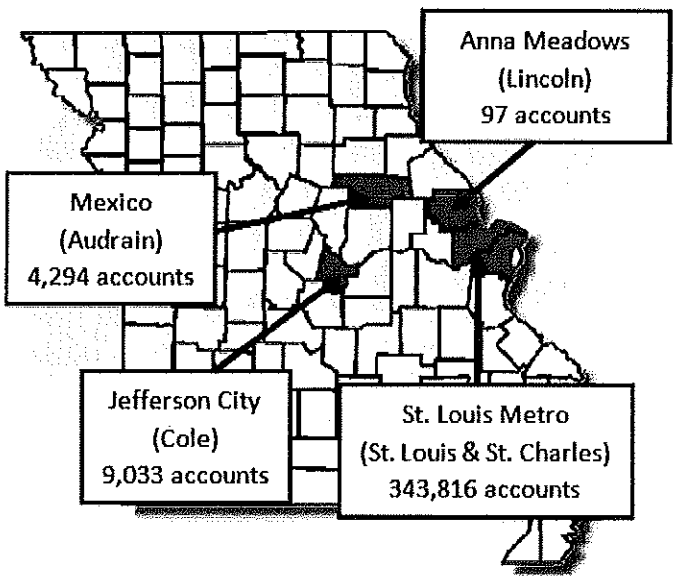


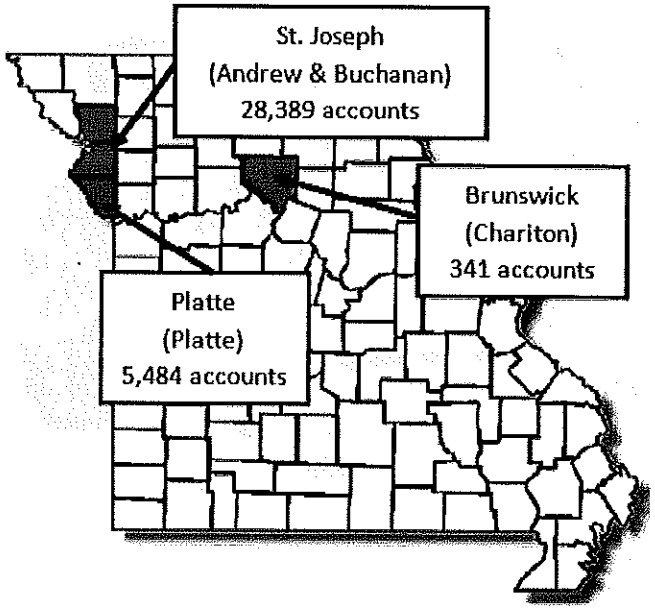


Attachment GM-1

Staff Proposed Districts







Attachment GM-2

MIEC 2-0001

DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2015-0301

Requested From: Tim Luft
Date Requested: 10/15/15

Information Requested:

Please provide a list of all projects that MWAC will be proposing to include in the Environmental Cost Adjustment Mechanism for the next three years. Please include the estimated capital costs and operating expenses broken out separately for each identified project.

Requested By: Edward Downey – Bryan Cave – efdowney@BryanCave.com
For MIEC – (Missouri Industrial Energy Consumers)

Information Provided:

MAWC does not currently have a list of projects for the next three years that would be included in the Environmental Adjustment Mechanism. However, federal, state, or local laws can be created or changed at any time, requiring expenditures.

Attachment GM-3

Missouri Public Service Commission

Respond Data Request

Data Request No.	0313
Company Name	Missouri-American Water Company-(Water)
Case/Tracking No.	WR-2015-0301
Date Requested	11/25/2015
Issue	Cost Recovery Mechanism - Environmental Cost Recovery
Requested From	Jeanne Tinsley
Requested By	Kevin Thompson
Brief Description	Environmental Cost Adjustment Mechanism
Description	Please provide a listing of all approved or proposed legislation and rules/regulations that MAWC is aware of that will or may have a material cost of service impact on the Company in the next four years, and for which the associated costs would be recoverable through the ECAM. For each such piece of legislation/rule/regulation, please provide the following information: 1) A brief description of the legislation/rule/regulation and its expected capital and operating requirements upon MAWC; 2) The identity of the governmental or regulatory body promulgating the rule; 3) The effective date of each, or expected effective date (if known); and 4) The expected cost of service impact of each (if known), broken out into capital and O&M components DR Requested by Mark Oligschlaeger (mark.oligschlaeger@psc.mo.gov)
Response	1) In accordance with the state Clean Water Law and regulation 10 CSR 20-6.010, National Pollutant Discharge Elimination System (NPDES) permits are renewed as required and the effluent parameters can be changed for the Missouri Department of Natural Resources (MDNR) to meet new requirements. The St. Louis County District North Plant, Jefferson City Plant, and the Parkville Plant NPDES permits are currently in the renewal phase. Prior to us receiving the new permit we must submit a Best Professional Judgement (BPJ) report for disposing lime softening waste to the Missouri River. If approval to dispose is allowed the new limits will be put in the permit. MAWC is awaiting guidance from MDNR on the BPJ process. 2) MDNR 3) Unknown at this time as the BPJ is required first and once the BPJ is approved the effective dates of compliance will be created. 4) The cost impact is not expected to occur within the next five years. Detail on the costs will not be determined until the compliance requirements for the NPDES permits are finalized. Responsible Witness: Kevin Dunn
Objections	NA

The attached information provided to **Missouri Public Service Commission** Staff in response to the above data information request is accurate and complete, and contains no material misrepresentations or omissions, based upon present facts of which the undersigned has knowledge, information or belief. The undersigned agrees to immediately inform the **Missouri Public Service Commission** if, during the pendency of Case No. **WR-2015-0301** before the Commission, any matters are discovered which

Attachment GM-4

would materially affect the accuracy or completeness of the attached information. If these data are voluminous, please (1) identify the relevant documents and their location (2) make arrangements with requestor to have documents available for inspection in the **Missouri-American Water Company-(Water)** office, or other location mutually agreeable. Where identification of a document is requested, briefly describe the document (e.g. book, letter, memorandum, report) and state the following information as applicable for the particular document: name, title number, author, date of publication and publisher, addresses, date written, and the name and address of the person(s) having possession of the document. As used in this data request the term "document(s)" includes publication of any format, workpapers, letters, memoranda, notes, reports, analyses, computer analyses, test results, studies or data, recordings, transcriptions and printed, typed or written materials of every kind in your possession, custody or control or within your knowledge. The pronoun "you" or "your" refers to **Missouri-American Water Company-(Water)** and its employees, contractors, agents or others employed by or acting in its behalf.

Security : Public
Rationale : NA

DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2015-0301

Requested From: Tim Luft

Date Requested: 11/13/15

Information Requested:

Please indicate by class for each of the Company's distinct districts (as applicable by current and recently acquired district):

1. The average, minimum, and maximum number of customers by meter size;
2. The meter sizes associated with multifamily customers; and,
3. The per-meter costs used in the Company's Class Cost of Service study by meter size.

To the extent that any of the requested information is not available, please provide the remaining data where possible. If another party to this case issued a similar Data Request, please provide a copy of the response to that Data Request.

Requested By: Alex Antal - Department of Economic Development - Alexander.Antal@ded.mo.gov

Information Provided:

1. Please refer to Exhibit PRH-1, Schedule C pages BRU-19, JFC-18, JOP-19, MEX-17, PTC-17, SJO-17, SLM-20 and WAR-17 for pro forma number of customers as of 12/31/2014 by meter size for the larger districts. The information for the smaller districts is attached as DED-DE 1-217_Attachment.

2. The Company's multifamily customers are not metered and are billed at a flat rate. Therefore there are no meter sizes associated with multifamily customers.

3. Refer Exhibit PRH-1, Schedule F for each district for the meter costs for a 5/8-inch meter used in the Company's Class of Service and the calculated meter costs by meter size in the attached schedule for the larger districts. The information for the smaller districts is not available with the exception that their data is included in the calculation for Schedule F for All Districts.

MIEC 3-0012

DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2015-0301

Requested From: Tim Luft
Date Requested: 10/15/15

Information Requested:

Primary causes for lower sales has been listed by MAWC as being weather, customer conservation, price elasticity, economic conditions, and improved water and energy efficiency. Please rank these factors from the one which causes the greatest effect on lower sales to the one which causes the least impact on lower sales. Has MAWC studied these causes on sales in any of its water districts? If so, please provide the analysis, clearly describing the factor causing the reduced sales and the specific impact that factor had on the sales.

Requested By: Edward Downey – Bryan Cave – efdowney@BryanCave.com
For MIEC – (Missouri Industrial Energy Consumers)

Information Provided:

MAWC has analyzed the total impact of numerous contributing causes to reductions in usage per customer on the MAWC system. MAWC has collectively analyzed these causes over time with its time series model and time related variable described in Mr. Roach's testimony. Weather variations in usage were removed from the per customer usage data prior to analyzing for time-related causes of usage reduction. As such, MAWC has estimated the total impact of the numerous causes of usage reduction, but has not performed an analysis that would support a rank order of the various usage reduction causes. Lastly, a district level time series analysis of usage reductions was provided by Mr. Dunn in his direct testimony.

DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2015-0301 / WR-2015-0302

Requested From: Tim Luft
Date Requested: 8/27/15

Information Requested:

Please provide a copy of any and all documents pertaining to any MAWC-specific residential end-use saturation studies performed in its service territory performed in the last ten years.

Requested By: Jere Buckman – Office of Public Counsel – jere.buckman@ded.mo.gov

Information Provided:

There have been no MAWC specific end-use saturation studies performed over the last ten years.

OPC 2107

DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2015-0301 / WR-2015-0302

Requested From: Tim Luft
Date Requested: 8/27/15

Information Requested:

Please provide a copy of any and all documents pertaining to any MAWC specific customer water conservation studies performed in its service territory in the last ten years.

Requested By: Jere Buckman – Office of Public Counsel – jere.buckman@ded.mo.gov

Information Provided:

There have been no MAWC specific customer water conservation studies performed in the last ten years.

Attachment GM-8

DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2015-0301 / WR-2015-0302

Requested From: Tim Luft
Date Requested: 8/27/15

Information Requested:

Please provide a copy of any and all documents pertaining to any local government conservation policies that have been in effect in MAWC's service territory from the date current rates went into effect to present.

Requested By: Jere Buckman – Office of Public Counsel – jere.buckman@ded.mo.gov

Information Provided:

No local government conservation policies have gone into effect in MAWC's service territory since the last rate case.

DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2015-0301 / WR-2015-0302

Requested From: Tim Luft
Date Requested: 8/27/15

Information Requested:

Please provide a copy of any and all documents pertaining to any state government conservation policies that have been in effect in MAWC's service territory from the date current rates went into effect to present.

Requested By: Jere Buckman – Office of Public Counsel – jere.buckman@ded.mo.gov

Information Provided:

No local government conservation policies have gone into effect in MAWC's service territory since the last rate case.

DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2015-0301 / WR-2015-0302

Requested From: Tim Luft
Date Requested: 8/27/15

Information Requested:

Please provide a copy of any and all documents pertaining to any federal government conservation policies that have been in effect in MAWC's service territory from the date current rates went into effect to present.

Requested By: Jere Buckman – Office of Public Counsel – jere.buckman@ded.mo.gov

Information Provided:

No local government conservation policies have gone into effect in MAWC's service territory since the last rate case.

OPC 2040

DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2015-0301 / WR-2015-0302

Requested From: Tim Luft
Date Requested: 8/18/15

Information Requested:

Please disclose whether MWAC has conducted a price elasticity analysis on its historical and/or proposed rate increase in relation to customer usage. If yes, please provide said analysis.

Requested By: Jere Buckman – Office of Public Counsel – jere.buckman@ded.mo.gov

Information Provided:

Missouri American Water Co has not conducted such an analysis.

Attachment GM-12

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 Mechanism for Utilities.	)))	Case No. AW-2015-0282

OFFICE OF THE PUBLIC COUNSEL'S RESPONSE TO COMMENTS

COMES NOW the Office of the Public Counsel (Public Counsel) and for its Response to Comments states as follows:

1. As the certain comments filed in this case show, decoupling is illegal in Missouri.

2. In response to comments submitted concerning decoupling as a policy choice, Public Counsel has attached a Memorandum drafted by Dr. Geoff Marke (See Attachment A).

3. Public Counsel looks forward to participating in the workshop scheduled for September 17, 2015.

WHEREFORE, Public Counsel submits its Response.

Respectfully submitted,

THE OFFICE OF THE PUBLIC COUNSEL

/s/ Christina L. Baker
By:_____

Christina L. Baker (#58303)
Deputy Public Counsel
P O Box 2230
Jefferson City, MO 65102
(573) 751-5565
(573) 751-5562 FAX
christina.baker@ded.mo.gov

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing have been mailed, emailed or hand-delivered to the parties of record this 11th day of September, 2015.

Missouri Public Service Commission
Whitney Payne
200 Madison Street, Suite 800
P.O. Box 360
Jefferson City, MO 65102
Whitney.Payne@psc.mo.gov

Missouri Public Service Commission
Office General Counsel
200 Madison Street, Suite 800
P.O. Box 360
Jefferson City, MO 65102
staffcounselservice@psc.mo.gov

/s/ Christina L. Baker

MEMORANDUM

TO: Missouri Public Service Commission Official Case File,
Case No. AW-2015-0282

FROM: Geoff Marke, Economist - The Missouri Office of the Public Counsel

SUBJECT: OPC Response to Comments

DATE: September, 11, 2015

INTRODUCTION

Many comments were filed in this docket, with most of the comments falling into the following broad categories: (1) legal arguments pertaining to decoupling; and (2) proposed literature for consideration by the Commission. Public Counsel commented previously on why decoupling is legally prohibited in Missouri and now offers the following responses in preparation for the workshop to be held on September 17, 2015.

RESPONSE TO THE SUBMITTED LITERATURE FOR CONSIDERATION

Three documents were referenced and/or submitted by multiple stakeholders in response to the Commissions questions. Public Counsel would like to make the following comments regarding those specific documents:

Vilbert, M. J. et al, (2014) The Impact of Revenue Decoupling on the cost of capital for electric utilities: An Empirical Investigation. *The Brattle Group.* http://www.brattle.com/system/publications/pdfs/000/004/995/original/Effect_of_Electric_Decoupling_on_the_Cost_of_Capital.pdf?1395776507

The "peer review group" for this white paper as listed below indicates individuals that are almost entirely made up of senior members of the National Resource Defense Council, a group that has been actively promoting decoupling and raises the question of bias in the model's outcome. Moreover, the limitations of the study need to be fully considered before making any conclusions on the relationship between ROE and decoupling, as the authors readily admit that the model did not consider the following variables:

- The companion revenue adjustment
- Coverage and independence of rate classes
- Inclusiveness of causes of demand fluctuations
- Adjustment over time using revenue target adjustment mechanism

The study also notes its model may not have captured all of the risk associated with unregulated assets, "Unlike our previous study of gas LDCs, the 14 company electric sample is not nearly as close to a "pure-play" sample. That is, the electric utility holding companies are larger and more diverse than the gas LDC sample. There may be changes in the risk of unregulated assets that we are not fully capturing." Despite these concerns, it should be noted that the study shows decoupling mechanisms are not prevalent in states with traditional rate making and/or combined with vertically integrated utilities.

Morgan, P. (2013) A Decade of Decoupling for US Energy Utilities. Rate Impacts, Designs, and Observations. *Graceful Systems*
http://switchboard.nrdc.org/blogs/rcavanagh/decouplingreportMorganfinal.pdf

Morgan's analysis examines the number and respective percentage adjustments made from gas and electric utility decoupling "true-ups" over a ten-year period. She also acknowledges the many methodological limitations inherent in examining a complex issue which requires extensive data cleansing of numerous, opaque "moving targets" within the analysis, including:

- The mixing of utility specific retail prices and statewide EIA data.
- Recognition that the percentages of impacts shown are not necessarily what customers experienced.

  Experienced rate changes would vary depending on whether the prior decoupling adjustment was more or less than the adjustment being put into place. For example, if the prior adjustment was a refund of 0.02 cents per kWh and the new adjustment is a refund of 0.01 cents per kWh, customers will experience a rate increase, even though the adjustment is negative because the prior adjustment terminates.
- And that rate change analysis did not factor in changes made from additional adjustments (e.g., FAC, infrastructure, renewable, etc...) or "blackbox" settlements.

Despite these limitations, it is important to note that on a whole, her analysis concludes that there have been significantly more surcharges (increases) than refunds (decreases) when a decoupling mechanism has been utilized. Absent from the study is whether or not the decoupling mechanism and the resulting risk shift to consumers is positively correlated to a reduction in future supply-side investment. Furthermore, the conclusion of the study does not support a finding that decoupling is a necessary mechanism for utility stability:

> Without looking at substantial amounts of empirical data, it is difficult to conclude that the risk of under-collecting fixed-cost revenue is greater than the lost opportunity of over-collecting fixed costs, assessed in consideration of changes between authorized and actual prudent fixed costs.

Wharton, J. B. Villadsen, H. Bishop (2013) Alternative Regulation and Ratemaking Approaches for Water Companies. *The Brattle Group*. http://www.nawc.org/uploads/documents-and-publications/documents/NAWC_Brattle_AltReg_Ratemaking_Approaches_102013.pdf

The second Brattle Group whitepaper submitted by stakeholders suffers from similar peer review/sponsorship bias, as the study's funding and the data provided was supplied by the National Association of Water Companies (NAWC). NAWC represents the companies in the private side of the water industry, who are both owners and operators of water and waste-water utilities as well as members of a variety of public-private partnerships with public water companies, and thus have a vested interest in the outcome of the paper.

The paper is essentially a cursory literature review of ratemaking treatment and alternative regulation across electric, gas and water utilities in the United States. The study includes various U.S. maps in which state commissions have at some point approved a departure for a utility from a traditional cost of service regulation framework. It also shows that water regulation has not deviated at the same rate across the U.S. from traditional cost-of-service regulation compared to gas and electric. In total, the paper identifies five states with conservation or revenue stabilization/decoupling mechanisms (Arizona, California, New York, Nevada, and Connecticut), all of which were legislatively driven and tied with legislatively enacted water loss conservation policies. Unlike the previous two submissions, the issue of adjustments to ROE was not addressed at length. There was no discussion of Commission-approved decoupling mechanisms tied to reductions in ROE, such as the 50 basis point reduction California American Water received for their shift in risk in receiving a decoupling mechanism in 2007.

ADDITIONAL LITERATURE FOR CONSIDERATION & DISCUSSION

Public Counsel recommends the following documents for consideration for the Commission and the stakeholders in the discussion on the use of decoupling for Missouri's regulated utilities:

Kihm, S. (2009) When revenue decoupling will work ...and when it won't. The Electricity Journal 22, 19-28. http://www.ecw.org/sites/default/files/kihmdecouplingarticle2009.pdf

Florida Public Service Commission (2008) Report to the Legislature on Utility Revenue Decoupling http://www.psc.state.fl.us/publications/pdf/electricgas/DecouplingReport_To_Legislature.pdf

Pennsylvania Public Utility Commission (2011) American Recovery and Reinvestment Act Investigation Working Group Final Report I-2009-2099881 https://www.puc.state.pa.us/general/RegulatoryInfo/pdf/ARRA_WG-Final_Report.pdf

Hoffman, et al. (2015) The total cost of saving electricity through utility customer-funded energy efficiency programs: Estimates at the national, state, sector and program level. Lawrence Berkeley National Laboratory. http://emp.lbl.gov/sites/all/files/total-cost-of-saved-energy.pdf

Arimura, T. et al. (2011) Cost-effectiveness of electricity energy efficiency programs. National Bureau of Economic Research Working Paper 17556. http://www.nber.org/papers/w17556.pdf

Sedano, R. (2011) Who should deliver ratepayer-funded energy efficiency? A 2011 update. The Regulatory Assistance Project. https://www4.eere.energy.gov/seeaction/system/files/documents/rap_sedano_whoshouldd eliverratepayerfundedee_2011__11_15.pdf

Hansen, D.G. & Michael T. O'Sheasy (2012) Residential Rate Study for the Kansas Corporation Commission Final Report. Christensen Associates Energy Consulting. http://www.kcc.state.ks.us/electric/residential_rate_study_final_20120411.pdf/AcroJS_DesignerJS.pdf

MIEC 3-0009

DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2015-0301

Requested From: Tim Luft
Date Requested: 10/15/15

Information Requested:

In the last 10 years, has MAWC ever been unable to pay its variable costs? In the last 10 years, has MAWC ever not collected enough customer revenues to meet its depreciation expense? In the last 10 years, has MAWC ever been unable to pay its tax (Federal, State, payroll, property) obligations? In the last 10 years, has MAWC been able to recover all of the fixed costs included in the customer rates? If the answer is no, for any period of time in the last 10 years, for each such period of time, did MAWC earn a positive return on investment? Provide all documentation supporting the responses to this data request.

Requested By: Edward Downey – Bryan Cave – efdowney@BryanCave.com
For MIEC – (Missouri Industrial Energy Consumers)

Information Provided:

MAWC has been able to pay these costs over the past 10 years.

Attachment GM-14

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 Mechanism for Utilities	)))	Case No. AW-2015-0282

MIEC AND OPC JOINT COMMENTS

The Missouri Industrial Energy Consumers ("MIEC")[1] and the Office of Public Counsel ("OPC") appreciate the opportunity to file these comments on decoupling, pursuant to the Commission's August 5, 2015 Notice Scheduling Workshop and Requesting Responses.

Both the MIEC and OPC intend to be active participants in this docket, and will attend the September 17, 2015 workshop that the Commission has scheduled.

Decoupling is not needed for the proper regulation of Missouri utilities, nor is it an option that is legally available for use by the Commission. Decoupling violates fundamental regulatory principles that the Commission has relied on for decades in determining just and reasonable rates. Decoupling will create customer confusion, will cause customer rate volatility, and may have unintended consequences. Moreover, decoupling is not the solution to the concerns raised by the electric utilities regarding the throughput disincentive related to MEEIA.

DECOUPLING IS ILLEGAL IN MISSOURI

Decoupling is illegal in Missouri. The bible for ratemaking law in Missouri is the Missouri Supreme Court decision in *State ex rel. Util. Consumers' Council of Mo., Inc. v. Pub. Serv. Comm'n,* 585 S.W.2d 41, (Mo. banc 1979). There, the Missouri Supreme Court noted that the Commission is to

[1]MIEC consists of large consumers of electricity in the state. MIEC member companies include Anheuser-Busch, Inc., Ardagh Glass, Inc., Bayer CropScience LP, BioKyowa, Inc., Enbridge Energy Partners, L.P., Ford Motor Company, General Motors, LLC, Hussmann Corporation, Monsanto Company, Nestle Purina PetCare Company, Noranda Aluminum, Inc., SunEdison Semiconductor, LLC, The Boeing Company, and The Doe Run Company.

set the "rate to be charged." If that rate is too high or too low, the Commission cannot legally change it to compensate for over- or under-recovery of costs or revenues:

> However, to direct the commission to determine what a reasonable rate *would have been* and to require a credit or refund of any amount collected in excess of this amount would be retroactive ratemaking. The commission has the authority to determine the rate *to be* charged, § 393.270. In so determining it may consider past excess recovery insofar as this is relevant to its determination of what rate is necessary to provide a just and reasonable return in the future, and so avoid further excess recovery, *See State ex rel. General Telephone Co. of the Midwest v. Public Service Comm'n*, 537 S.W.2d 655 (Mo. App. 1976). It may not, however, redetermine rates already established and paid without depriving the utility (or the consumer if the rates were originally too low) of his property without due process.
>
> The utilities take the risk that rates filed by them will be inadequate, or excessive, each time they seek rate approval. To permit them to collect additional amounts simply because they had additional past expenses not covered by either clause is retroactive rate making, i.e., the setting of rates which permit a utility to recover past losses or which require it to refund past excess profits collected under a rate that did not perfectly match expenses plus rate-of-return with the rate actually established, *Board of Public Utility Commissioners v. New York Telephone Co.*, 271 U.S. at 31, 46 S. Ct. 363; *Lightfoot v. Springfield*, 236 S.W.2d at 353. Past expenses are used as a basis for determining what rate is reasonable to be charged in the future in order to avoid further excess profits or future losses, but under the prospective language of the statutes, §§ 393.270(3) and 393.140(5), they cannot be used to set future rates to recover for past losses due to imperfect matching of rates with expenses.[2]

The retroactive adjustment for lower (or higher) revenues than planned is just as objectionable as the retroactive adjustment for higher (or lower) expenses than planned. The rate adjustment that decoupling proposes to guarantee a utility's revenue is illegal retroactive ratemaking because "the commission [would be] determin[ing] what a reasonable rate would have been and ... requir[ing] a credit or refund of any amount collected in excess of this amount [or collecting any revenue shortfall from tomorrow's ratepayers]." Rather than fixing "the rate to be charged," under decoupling the

[2] *Id.*, 585 S.W.2d at 58-59 (emphasis added).

utility will charge (or credit) tomorrow's ratepayers to the extent that the utility's past rate was too low (or too high).

DECOUPLING IS POOR REGULATORY POLICY

Decoupling represents bad public policy even if decoupling were legal. Decoupling violates the fundamental foundation for setting rates. Even advocates of decoupling agree that a rate case is the place to set rates to be charged to customers. It is also agreed that the rates should be set to collect the test year revenue requirement. The Commission has reiterated this point in almost all of its recent rate case orders:

> [R]evenue requirement is calculated by adding the company's operating expenses, its depreciation on plant in rate base, taxes, and its rate of return multiplied by its rate base. The revenue requirement can be expressed as the following formula:
>
> - Revenue Requirement =E+D+T+R(V-AD+A)
> - Where:
>   - E= Operating expense requirement
>   - D= Depreciation on plant in rate base
>   - T= Taxes including income tax related to return
>   - R= Return Requirement
>   - (V-AD+A)= Rate Base
>
> ▪ For the rate base calculation
>
> - V=Gross Plant
> - AD= Accumulated Depreciation
> - A= Other rate base items

Although all parties agree with this concept, those that support decoupling are willing to abandon this fundamental ratemaking principle and adjust revenues outside of a rate case to maintain collection of the previously established level of revenues, regardless of the level of sales, expenses or investment. Decoupling would guarantee the recovery of that level of revenue without consideration of any changes to the components of the revenue requirement formula listed above. It violates the "all relevant factors" ratemaking construct, which describes a ratemaking concept where all of the factors that affect a utility's revenue requirement should be considered during the same period of time before changing rates. With decoupling, the utility would be guaranteed collection of test year revenues without regard to actual sales or the actual costs (expenses and investments) incurred to provide utility service, and could earn a rate of return that is much higher than found appropriate in the previous rate case.

Decoupling creates rate volatility for customers. Decoupling will result in periodic rate changes for customers. It is very unlikely that a utility will actually collect the exact level of revenue determined in the rate case, so decoupling will result in periodic adjustments to bring the actual level of revenues either up or down, to the revenue requirement set in the preceding rate case. Therefore, under decoupling, a customer will face regular rate changes. It would not matter whether deviations in revenues were the result of the loss of customers, cooler than normal or warmer than normal weather, an economic downturn, sub-par utility earnings or anything else. The revenue requirement and rates currently are based on normal weather, so if actual weather conditions are cooler than normal, the electric utility will not collect as much revenue because customers will not be using as much electricity for air conditioning. With decoupling, the utility would be allowed to recover otherwise ungenerated revenues resulting from the cooler than normal weather conditions.

Likewise, if economic conditions are unfavorable, utility commercial customers will use less electricity or go out of business due to a lower demand for their products. If decoupling were in

effect, those lost revenues from lower electricity usage would be collected from existing customers to make up the shortfall. Depending on the magnitude of the economic downturn, this could cause very drastic rate increases. Requiring a business that is struggling to keep its doors open to pay more to assure the electric utility is guaranteed a level of revenues during such harsh economic times would be inequitable and counterproductive, as well as a public relations challenge for the utility and Commission.

As an example of a failed decoupling experiment, Maine adopted decoupling for Central Maine Power shortly before the Great Recession in 2008. Because of the recession, many businesses either ceased operating or significantly reduced their output and consumption of electricity. As a result, sales were drastically reduced and the decoupling mechanism generated significant rate increases. Accordingly, the Maine Regulatory Commission decided to discontinue the decoupling mechanism.

In the State of Washington, decoupling was initiated at the same time as a power cost recovery mechanism. The power cost mechanism produced large rate increases for customers. That state's regulatory Commission investigated the reasons for the large increases in the power cost mechanism and, based on that investigation, determined that the utility had acted imprudently in increasing its power supply costs. In response, that Commission ruled that the combined power cost and decoupling should be discontinued. Subsequent to that decision, the utility was involved in a merger and the two recovery mechanisms were not reinstituted for the merged utility company. Instead, a multi-year rate plan was adopted. This highlights that decoupling can have unintended consequences beyond its original intent, which can create large rate increases to captive utility customers. It is also possible that the regulatory framework may be such that decoupling is not needed. Before adopting decoupling, a careful analysis should be conducted, examining all of the regulatory tools available to the utility to determine if decoupling is needed.

Decoupling can affect the incentive to restore service expeditiously after a major storm. Under current regulatory practices, a utility has a strong incentive to restore service quickly, not only to meet its reliability metrics, but also because it is in its best financial interest to restore service and resume the collection of revenues. Storm restoration can involve overtime work, and additional compensation for employees and compensation to other utilities for "mutual assistance" in restoring, repairing and replacing damaged infrastructure. If utility revenues are insulated from such events, meaning it will collect the same amount of revenues regardless of how quickly service is restored, there is an economic disincentive to spend extra money for overtime and mutual assistance, because doing so would not affect the level of revenues collected and would decrease profit. If storm costs are determined to be extraordinary and deferred accounting treatment is permitted, storm affected customers will be subject to paying higher revenues with decoupling.

Respectfully submitted,

BRYAN CAVE, LLP

By: */s/ Edward F. Downey*

Diana M. Vuylsteke, # 42419
211 N. Broadway, Suite 3600
St. Louis, Missouri 63102
Telephone: (314) 259-2543
Facsimile: (314) 259-2020
E-mail: dmvuylsteke@bryancave.com

Edward F. Downey, #28866
221 Bolivar Street, Suite 101
Jefferson City, MO 65109
Telephone: (573) 556-6622
Facsimile: (573) 556-7442
E-mail: efdowney@bryancave.com

Attorneys for the MIEC

OFFICE OF THE PUBLIC COUNSEL

By: */s/ Christina L. Baker*

Christina L. Baker, #58303
200 Madison Street, Ste. 650
Jefferson City, Missouri 65102
Telephone: (573) 751-4857
Facsimile: (573) 751-5562
E-mail: christina.baker@ded.mo.gov

Attorney for the Office of the Public Counsel