

Exhibit No.:	
Issues:	Sales and Usage
Witness:	Gregory P. Roach
Exhibit Type:	Rebuttal-Revenue Requirement
Sponsoring Party:	Missouri-American Water Company
Case No.:	WR-2020-0344
Date:	January 15, 2020

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. WR-2020-0344

**REBUTTAL TESTIMONY
REVENUE REQUIREMENT**

OF

GREGORY P. ROACH

ON BEHALF OF

MISSOURI-AMERICAN WATER COMPANY

AFFIDAVIT

I, Gregory P. Roach, under penalty of perjury, and pursuant to Section 509.030, RSMo, state that I am Senior Manager of Revenue Analytics for American Water Works Service Company, that the accompanying testimony has been prepared by me or under my direction and supervision; that if inquiries were made as to the facts in said testimony, I would respond as therein set forth; and that the aforesaid testimony is true and correct to the best of my knowledge and belief.



Gregory P. Roach

January 14, 2021

**REBUTTAL TESTIMONY
GREGORY P. ROACH
MISSOURI-AMERICAN WATER COMPANY
CASE NO. WR-2020-0344**

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3 **I. INTRODUCTION, PURPOSE OF TESTIMONY AND**
4 **RECOMMENDATIONS**

5
6 **Q. Please state your name and business address.**

7 A. My name is Gregory P. Roach. My business address is 153 N. Emerson Ave, Greenwood,
8 IN 46143.

9 **Q. On whose behalf are you submitting this testimony?**

10 A. Missouri-American Water Company (“Missouri-American” or “the Company”).

11 **Q. Did you previously provide Direct Testimony in this proceeding?**

12 A. Yes.

13 **Q. What is the purpose of your Rebuttal Testimony?**

14 A. The purpose of my revenue requirement rebuttal testimony is to address the appropriate
15 level of test year usage and water sales to be used in setting rates in this proceeding.

16 **II. RATE CASE TEST YEAR USAGE**
17

18 **Q. Do witnesses from Staff and interveners address the Company’s proposed test year**
19 **usage and sales volumes in this proceeding?**

20 A. Yes. Office of Public Counsel (OPC) witness Lena Mantle, Missouri Industrial
21 Energy Consumers (MIEC) witness Greg Meyer, and Commission (Staff) witness
22 Ashley Starver, all address and object to the Company’s forecast of test year usage and

1 volume levels for residential and commercial customers. Those criticisms are misplaced
 2 and, in many cases, actually serve to demonstrate why the future test year requires
 3 employment of an analytical forecast model to project test year usage and sales as opposed
 4 to relying on averages of past period usage.

5 **Q. Would you please detail the proposals these witnesses are making for setting test year**
 6 **sales and usage for the residential and customer classes?**

7 A. Yes. The various proposals for setting test year sales volumes and usage are detailed in
 8 Table GPR-1R below.

Table GPR-1R									
OPC, Staff and MIEC Test Year									
Sales and Usage Proposals									
Party	Witness	Method	Residential		Commercial		Usage Per Cust Day		
			St. Louis	Other	St. Louis	Other	Tariff D-1	Tariff D-2	
OPC	Mantle	3 Year Average 2017-2019	6,596	4,727	42,151	25,356			
Staff	Sarver	5 Year Average July 2015 - June 2020					0.2161	0.1656	
MIEC	Meyer	3 Year Average 2017-2019	6,597	4,727	42,160				

9
 10 **Q. Why is it important to normalize test year usage and sales that are applied as billing**
 11 **determinants to determine new rate levels for MAWC?**

12 A. This is best explained with an example. Consider a widget maker serving a specific market
 13 with limited market competition influencing price. The production manager’s objective is
 14 to set widget production in order to support a price for widgets ensuring that sales revenues
 15 cover the company’s expenses and provide the company’s investors with a return on their
 16 investment in the production and support machinery. In order to set production levels of
 17 widgets for the future period, the production manager must make forecasts of the overall
 18 normalized demand of widgets eliminating any one-time market perturbations that may
 19 have occurred in prior years while taking into consideration market conditions for the
 20 future period. Further, to set pricing, the production manager must forecast the Company’s

1 total production costs including both fixed and variable costs of production in the future
2 period. In so doing, the production manager is forecasting future sales units, future
3 production costs (including a return to investors) and arrives at the future price by dividing
4 the total costs by the future sales units that the Company can reasonably expect to sell in
5 the marketplace.

6 **Q. In the example of the widget maker, would it make sense to forecast future sales levels**
7 **based solely on the past?**

8 A. No, it wouldn't. If sales volumes have increased or decreased year over year, have been
9 influenced by specific non-repeating perturbations in the historic period or are influenced
10 by long term trends that would impact the future period sales forecast, relying specifically
11 on historic data will lead to erroneous future period forecasts. Setting the wrong price
12 based on inaccurate widget unit sales forecasts would likely lead to sales varying from the
13 production forecasts and the Company either under- or over-recovering its production costs
14 due to the influence of the historic data not matching future trends.

15 **Q. Does the sales forecast and pricing relationship in the water utility industry mirror**
16 **the example above?**

17 A. Yes, it does. Structural declines in residential and commercial usage, as I delineated in my
18 direct testimony continue to impact the Company. This implies that relying specifically on
19 any non-normalized historical period is unlikely to produce the amount of revenue the
20 Company will incur in the future. Further, ignoring the year-to-year perturbations in sales
21 due to the influence of weather factors will lead to sales forecasts that are biased by the
22 non-normalized influence of weather during the historic period used to estimate future test
23 year usage and sales levels.

1 **Q. What methodology is OPC, Staff and MIEC proposing for purposes of forecasting**
2 **sales and usage for setting rates?**

3 A. The OPC and MIEC are proposing similar 36-month averages, defined by the period
4 January 2017 through December 2019, as the basis of setting forecasted usage for setting
5 rates. Staff proposes a similar averaging technique but applied to the 60-month period of
6 July 2015 through June 2020.

7 **Q. What are the implications of using the OPC and MIEC proposals for setting sales and**
8 **usage forecast levels?**

9 A. The OPC and MIEC proposed methodologies are based on a 36-month average comprised
10 of the period January 2017 through December 2019 to set the sales and usage levels while
11 making no attempt to normalize usage for either any long term structural conservation trend
12 nor the influence of weather over the period averaged. Thus, the proposed OPC and MIEC
13 methodology produces a forecast that ignores any underlying structural conservation trend
14 while being unduly influenced by the weather conditions that occurred during the 36-month
15 period that was averaged to produce their forecasts. At a high level, both OPC and MIEC
16 are asking the Commission to 1) ignore any long term structural usage decline impacting
17 MAWC usage and sales, and 2) assume that non-weather normalized usage data will be
18 indicative of future usage, while ignoring that such data is considerably influenced by the
19 weather occurring during the 36 months of data comprising the average.

20 **Q. Have you analyzed the weather conditions occurring during the 36 months averaged**
21 **by OPC and MIEC versus the 10-year period the Company normalized?**

1 A. Yes, I have. As illustrated in Table GPR-2R below, the 36 monthly values averaged for
 2 purposes of forecasting usage and sales by the OPC and MIEC experienced weather
 3 conditions that were 21% dryer and 4% warmer than the 10-year period that MAWC
 4 utilized to normalize for “average” weather conditions (2010-2019). Based on those
 5 comparative weather results, the OPC and MIEC forecasts are significantly influenced by
 6 the dryer conditions experienced during the time period chosen by OPC and MIEC for
 7 averaging. The result of employing such a heavily weather influenced period without
 8 performing a weather normalization analysis led to overstatement of both residential and
 9 commercial usage. Should the OPC and MIEC sales and usage numbers be employed to
 10 set rates in this case, the result would be consumer rates set at levels influenced by these
 11 dryer and warmer than normal conditions, which have a very limited probability of
 12 occurring again when new rates approved in this case become effective. As a result of
 13 using such weather influenced billing determinants to set rates, MAWC will be in position
 14 of chronic under recovery of its authorized revenue requirement.

Table GPR-2R The Impact of Weather OPC and MIEC Test Year Sales and Usage Proposals									
Party	Witness	Method	June-Sept CDD		June-Sept Precip		Days Over 90		
			Value	% Change	Value	% Change	Value	% Change	
MAWC	Roach	10 Year Regression Normalization	1,627	0.0%	15.9	0.0%	57.9	0.0%	
OPC	Mantle	3 Year Average 2017-2019	1,628	0.1%	12.6	-20.8%	60.3	4.1%	
MIEC	Meyer	3 Year Average 2017-2019	1,628	0.1%	12.6	-20.8%	60.3	4.1%	

15

16 **Q. What are the implications of using the Staff proposal for setting sales and usage**
 17 **forecast levels?**

18 A. The Staff proposed methodology is based on a 60-month average comprised of the period
 19 July 2015 through June 2020. The Staff forecasted sales and usage levels make no attempt
 20 to normalize usage for either any long-term structural conservation trend or normalize

1 historic data for the influence of weather over the period averaged. Additionally, the Staff
2 forecast employs data from the period March through June 2020 that is influenced by the
3 perturbations due to the COVID-19 national medical emergency, a one-time event with a
4 nearly zero probability of being repeated during the period in which the rates set by this
5 case will be effective. Staff is effectively proposing a methodology that produces a forecast
6 ignoring any underlying structural conservation trend while being unduly influenced by the
7 weather conditions occurring during the 60-month period that was averaged. At a high
8 level, Staff is asking the Commission to 1) ignore that any long term structural usage
9 decline is impacting MAWC usage and sales 2) assume that non-weather normalized usage
10 data will be indicative of future test year usage, while ignoring that such data is
11 considerably influenced by the weather occurring during the 60 months of data comprising
12 the average, and 3) ignore that the influence of the COVID-19 national medical emergency
13 will not continue unabated through the period that rates set during this proceeding will be
14 effective.

15 **Q. Have you analyzed the weather conditions occurring during the 60 months averaged**
16 **by Staff versus the 10-year period the Company normalized?**

17 A. Yes, I have. As illustrated in Table GPR-3R below, the 60 month period averaged for
18 purposes of forecasting usage and sales by Staff experienced weather conditions that were
19 6% dryer and 2% warmer than the 10-year period that MAWC utilized to normalize for
20 weather conditions (2010-2019). Based on those comparative weather results, the Staff
21 forecast is significantly influenced by the dryer conditions experienced during the time
22 period chosen for averaging. The result of employing such a weather influenced period
23 without performing a weather normalization analysis led to overstatement of both

1 residential and commercial usage by the Staff. Should the Staff sales and usage numbers
 2 be employed to set rates in this case, the result will yield consumer rates set at levels
 3 influenced by these dryer and warmer conditions, which have a very limited probability of
 4 occurring again when new rates set in this case become effective. As a result of using such
 5 weather influenced billing determinants to set rates, MAWC will be in position of chronic
 6 under recovery of its authorized revenue requirement.

Table GPR-3R The Impact of Weather Staff Test Year Sales and Usage Proposals									
Party	Witness	Method	June-Sept CDD		June-Sept Precip		Days Over 90		
			Value	% Change	Value	% Change	Value	% Change	
MAWC	Roach	10 Year Regression Normalization	1,627	0.0%	15.9	0.0%	57.9	0.0%	
Staff	Sarver	5 Year Average July 2015 - June 2020	1,657	1.8%	15.0	-5.7%	59.2	2.2%	

7

8 **Q. Staff has chosen to include 2020 data as part of its 60-month averaging technique.**

9 **Why did the OPC choose not to use that data in its analysis?**

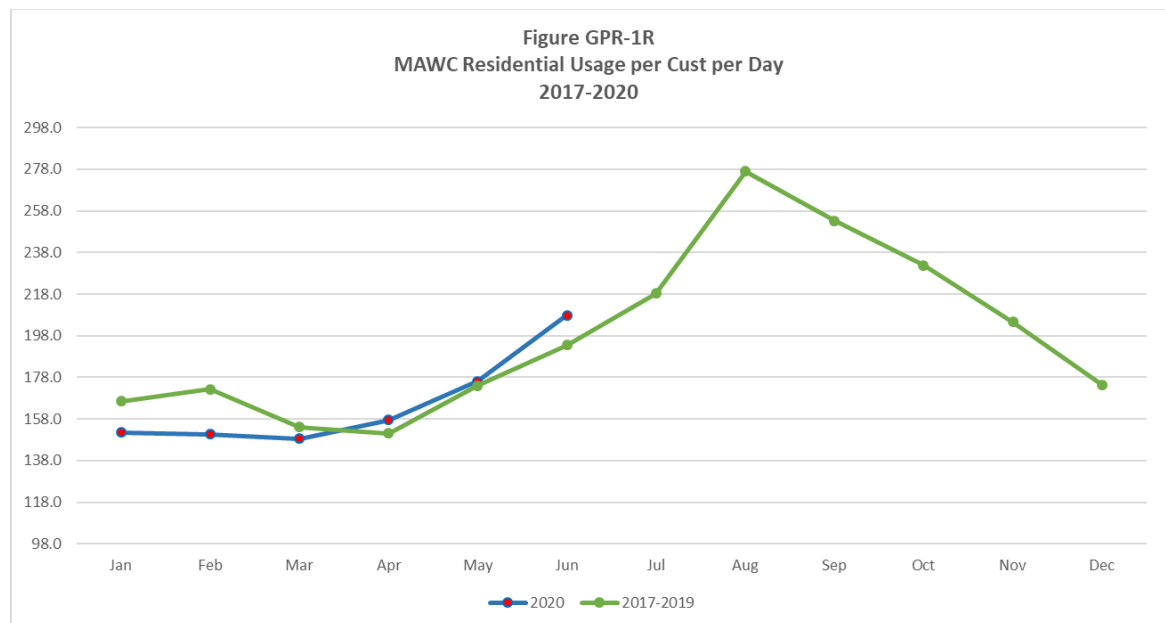
10 A. In her direct testimony at page 6 lines 5-8, OPC witness Mantle explains why she chose to
 11 exclude the 2020 data MAWC provided to all parties.

12 "I received usage data from MAWC through September 2020 in response
 13 to OPC data request 8002.1. This data shows that the usage per customer
 14 for 2020 is higher than the usage in 2019 through September. Therefore, I
 15 believe that future usage is more likely to return to the pre-2019 level."

16 Due to the one-time non-repeating impact of the COVID-19 emergency on MAWC
 17 residential usage, Ms. Mantle correctly chose to exclude the 2020 data from her analysis
 18 as she does not see the COVID-19 influenced usage being a long-term trend.

19 **Q. Have you analyzed the 2020 MAWC usage data employed by the Staff in their**
 20 **analysis versus the trends seen during the 2017 through 2019 time frame?**

1 A. Yes, Figure GPR-1R below presents a comparison of MAWC residential usage per
2 customer, per day for the period January 2017 through December 2019, as compared to the
3 period January through June 2020. Figure GPR-1R illustrates that residential 2020 usage
4 beginning in April 2020 was 4.2% (April), 1.3% (May), and 7.5% (June) greater
5 respectively than the 2017-2019 averages following public authority actions taken in
6 March of 2020 to respond to the national emergency. Figure GPR-1R clearly illustrates
7 that by incorporating what is likely to be a one-time usage impact from COVID-19 into its
8 forecasted usage, Staff is recommending that consumer rates be set at levels influenced by
9 a unique one-time event due to the COVID-19 pandemic, which has a limited probability
10 of occurring or continuing to occur once new rates set in this case become effective. As a
11 result of using such COVID-19 influenced billing determinants to set rates, MAWC would
12 be in position of chronic under recovery of its authorized revenue requirement.



13
14

III. RECOMMENDATIONS

1
2
3 **Q. What do you recommend related to the proposed forecasts of usage employed by OPC**
4 **and MIEC for purposes of setting revenue and rate levels in this case?**

5 A. I recommend that both the OPC and MIEC proposals to set revenue, billing determinants
6 and rates in this proceeding based on a 36 month average of the data from 2017-2019 be
7 rejected by this Commission as their respective methodologies 1) are heavily influenced
8 by abnormally dry and warm weather influencing sales during that period, and 2) fail to
9 identify and correct for the impact of longer term structural usage reductions that were
10 obscured by weather influences in the years analyzed. As a result, if OPC and MIEC usage
11 numbers are used to set rates in this case, it would result in consumer rates set at levels
12 influenced by dryer and warmer conditions which have a limited probability of occurring
13 again once the rates set in this case become effective. As a result, the Commission should
14 avoid using such weather influenced billing determinants to set rates to ensure that MAWC
15 will not be faced with chronic under recovery of its authorized revenue requirement due to
16 one-time non-normalized weather impacts on usage.

17 **Q. What do you recommend related to the proposed forecast of future test year usage**
18 **employed by Staff for purposes of setting future revenue and rate levels in this case?**

19 A. In addition to the recommendation cited above for rejecting the OPC and MIEC usage
20 forecasts, which also apply to Staff's proposed forecast, the Staff proposal is significantly
21 more problematic as it includes data from 2020 influenced by the one-time impact of the
22 COVID-19 pandemic. This likely one-time usage impact has a low probability of
23 occurring when rates set in this case become effective, placing MAWC in a chronic
24 position of under recovery of its authorized revenue requirement. Due to the influence of

1 weather, failure to include a trend of structural decline and employing data influenced by
2 the COVID-19 pandemic, the Staff's forecast for usage and billing determinants should be
3 rejected by the Commission for use in setting rates this case.

4 **Q. How is the MAWC methodology superior to the OPC, MIEC and Staff approaches**
5 **to forecasting usage and billing determinants?**

6 A. The MAWC methodology is superior to any of the simple averaging techniques proposed
7 by OPC, MIEC and Staff as the Company approach 1) normalizes 10 years of usage for
8 weather impact in each discrete year, 2) is able to normalize 10 years of usage for weather
9 influences, and 3) is able to identify and measure the impact of longer term structural usage
10 decline due to the impact of forced conservation through fixture and appliance usage
11 restrictions. As such the Company's approach is the only proposed usage forecast that 1)
12 normalizes usage for weather influences, 2) identifies the impact of longer term structural
13 usage decline due to the impact of forced conservation through fixture and appliance usage
14 restrictions, and 3) is not influenced by the one-time impact of COVID-19 perturbations.
15 Due to those three features, the Company's forecast has the highest probability of
16 incorporating accurate future trends and normalized weather resulting in rates being set
17 that are equitable for customers and the Company.

18 **Q. Does this conclude your Rebuttal Testimony?**

19 A. Yes.