Exhibit No.:	
Issue(s):	*Customer Usage and Customer Normalization*
Witness:	*Jarrod J. Robertson*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Rebuttal Testimony*
Case No.:	*WR-2017-0285*
Date Testimony Prepared:	*January 17, 2018*

MISSOURI PUBLIC SERVICE COMMISSION

COMMISSION STAFF DIVISION

WATER AND SEWER DEPARTMENT

REBUTTAL TESTIMONY

OF

JARROD J. ROBERTSON

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2017-0285

Jefferson City, Missouri
January 2018

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MISSOURI-AMERICAN WATER COMPANY

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Q. Please state your name and business address.

A. My name is Jarrod J. Robertson and my business address is P.O. Box 360, Jefferson City, Missouri 65102.

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

A. I am a Utility Policy Analyst I in the Water and Sewer Department of the Commission Staff Division of the Missouri Public Service Commission ("Commission").

Q. Are you the same Jarrod J. Robertson that sponsored portions of Staff's Cost of Service Report and filed direct testimony in this case?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to first address revisions to my Direct Testimony schedule, "Schedule JJR-d1", second, to address the submittal of Schedule JJR-r2, and last I will address the testimony of Missouri-American Water Company (MAWC) witness Greg Roach regarding customer usage.

Q. What is the first revision you would like to address within Schedule JJR-d1?

A. I have revised the usage per day calculations for District 1, District 2, and District 3. The revisions I would like to address first are the edits to District 1.

Q. What are the revisions you made to District 1 usage per day?

A. The new usage per day value for District 1 is 0.2242 gpcd (gallons per customer per day). I calculated this new amount by making the following revisions. In order to account for a lack of usage data for the Redfield system in the year 2015 for the months of July, August, and September, I used the data from those same months from the year 2016. Then, I accounted for leap year for all systems in District 1, by adjusting all annual figures in the "Usage/Day" column to be divided by 365.25 days.

Q. What revisions did you make to District 2 usage per day?

A. The new usage per day value for District 2 is 0.1545. I calculated this new amount by making the following revisions. I accounted for leap year for all systems in District 2, by adjusting all annual figures in the "Usage/Day" column to be divided by 365.25 days.

Q. What are the revisions you made to District 3 usage per day?

A. The new usage per day value for District 3 is 0.1314. I calculated this new amount by making the following revisions. I used an average of the pertinent months with data in order to account for a lack of 12 months of usage data in the first year of recorded usage for the following systems; Spring Valley, Ozark Mountain, Maplewood, and Tri-States. For example, Spring Valley was missing data for the month of July in 2011, so I averaged all data for the month of July from the years 2012-2017 usage data, and used that average in providing usage totals for 2011-2012. The averaging of multiple months with data for Spring Valley, Ozark Mountain, Maplewood, and Tri-States to represent months minus usage data is different than simply using one data point to represent another, as I did with Redfield.

For the Tri-States system, I adjusted the total yearly usage column to account for five individual years of data (2017, 2016, 2015, 2014, and 2013). I had previously combined all

five years of usage data into 2016-2017 usage total. I also, accounted for leap year for all systems in District 3, by adjusting all annual figures in the "Usage/Day" column to be divided by 365.25 days.

Q. Does that conclude the update regarding the revisions to Schedule JJR-d1?

A. Yes.

Q. Will you be attaching the revised schedule with your rebuttal testimony?

A. Yes. I have attached the revised schedule, which will be titled, "Schedule JJR-r1."

Q. Are there any other items related to your Schedule(s) you would like to address?

A. Yes. I have attached a second Schedule with this rebuttal testimony, Schedule JJR-r2.

Q. What is the purpose of Schedule JJR-r2?

A. Schedule JJR-r2, contains information related to Staff's five year-average(s) vs actual usage for District 1, District 2, and District 3. This information is provided via graphs on Schedule JJR-r2, and I will go into further detail regarding this particular Schedule later in this testimony.

Response to MAWC Customer Usage Testimony

Q. Regarding the testimony of MAWC witness Gregory Roach, what customer usage issues will you be addressing?

A. I will be addressing the appropriate method Staff recommends the Commission use to determine residential customer usage for MAWC's residential customers in order to determine appropriate revenues.

Q. Why is customer usage important?

A. There are two reasons that customer usage is important. The first reason is customer usage needs to be normalized in order to determine normalized levels of revenues for the utility. Rate revenue is determined by multiplying the Commission-approved commodity/usage rates by total usage, in addition to the customer/fixed rates. Usage fluctuates in any given year, based on many different criteria. Due to this fact, a normalized level of usage must be determined in order to calculate normalized revenues. It is this normalized amount of revenues that is compared to the utility's cost of service to determine if an increase or decrease in rates is necessary.

The second reason why customer usage is important is that normalized usage is a factor in the determination of new Commission approved rates on a going forward basis.

Q. Please generally explain how the Commission set rates.

A. Generally, in a rate case, the Commission determines an annual amount of revenues that the utility needs to collect in order to cover the Company's cost of service. Once the cost of service is determined, rates are calculated. Generally, there are two components in a water utility's rate structure; a monthly customer charge, or "fixed" rate, and a commodity/usage rate.

Q. How is the customer charge calculated?

A. The customer charge is calculated by dividing the portion of the water utility's Commission ordered revenue requirement that is not dependent on usage by the total number of customers. Generally, there is very little issue taken with the appropriate amount of customers used in this determination.

Q. How is the commodity/usage charge calculated?

A. The commodity charge is calculated by dividing the remaining portion of the Commission ordered revenue requirement by the normalized usage levels. If the normalized usage levels are not in line with actual usage, the Company may not collect its Commission authorized revenues. If normalized usage levels are too high, the commodity/usage rate will be lower, and if normalized usage levels are too low, the commodity/usage charge will be higher. While there are many factors that determine if the water utility collects more or less than its Commission approved revenues, it is important to establish a fair commodity/usage charge to lessen the effect this aspect has to alter revenues.

Q. What method did MAWC use to calculate residential usage?

A. According to pages six and seven, of direct testimony submitted by MAWC witness Roach, MAWC analyzed monthly residential customer consumption over the past ten years. For the purposes of MAWC's analysis, witness Roach divided total residential customer monthly usage into its base, non-weather sensitive usage and non-base, weather sensitive usage components. Base usage was then analyzed by applying regression analysis using time (ten years), as a proxy variable, in order to support its argument that residential customer usage is declining. MAWC defined base usage as, usage occurring between the months of December through April; thus, non-base usage is represented by the remaining months of the year, May through November.

Q. Does Staff acknowledge that there appears to be a decline in residential customer usage?

A. Staff is aware that consumer usage patterns have changed over the years due to many different factors. Consumers are displaying more discretionary use patterns as a result of efficiency education, more water-efficient appliances, low-flow toilets, and other efficient

fixtures. On the opposite end of the spectrum there are subdivisions that require individual residential water use via lawn watering/sprinkler operation during the summer months. Even with these changes in usage patterns, and a multitude of other variables, it does appear residential customer usage on a per day basis is less today than it was in the past.

Q. What method did Staff use to determine the appropriate residential customer usage?

A. Staff used a five-year average.

Q. Why did Staff use a five-year average?

A. Staff uses a five-year average to determine a normalized level of residential usage, as a five-year average is the most reasonable and appropriate method in calculating the appropriate usage on a going forward basis. While a longer time frame may display declining usage trends, in any given five year period, usage can fluctuate dramatically, up or down, based on various factors that a trend analysis may not detect. Thus, while Staff's proposal of a five-year average acknowledges usage patterns have changed over a period of time, the five-year average displays recent usage patterns are more consistent with current and near future usage patterns.

Q. Why is focusing on recent usage patterns important?

A. It is important to focus on recent usage behavior as rates for MAWC are generally set for a two-four year period. MAWC controls when it chooses to come to file a rate case; however, to maintain its Infrastructure System Replacement Surcharge (ISRS), MAWC is bound to no more than three years between rate increases if it chooses to implement an ISRS. If a company files a rate case every two-four years, the five-year average would better encapsulate current usage trends (two-four years), plus "historical" data

(one-three years) from previous usage data from the last rate case. Thus, the five-year average will lead to a more reasonable normalized usage level as it focus on recent usage patterns, more-so than a ten year regression analysis.

Q. Is Staff alone in the conclusion that a five-year average is the most justifiable method in reasonably normalizing usage levels?

A. No. The Office of Public Counsel ("OPC") also utilized a five-year average for the years 2012 through 2017 in setting base usage for the months of February, March and April in District 2 and District 3. OPC utilized this same average in calculating District 1, minus customer usage related to 2017.

Q. Has Staff performed any further analysis to support the premise that Staff's five-year average better encapsulates current customer behavior and usage patterns?

A. Yes. Staff has developed District line charts, tracking customer usage, to display that Staff's five-year average is a more reasonable proxy for current patterns than a ten-year regression analysis, as well as, show the five-year averages become more accurate as the trend line approaches present time, Staff's five-year average margin of error (the difference between data points that represent Staff's five-year average, versus actual usage), is actually decreasing, thus becoming more accurate. This information is provided in Schedule JJR-r2.

Q. Can you explain the decrease in Staff's margin of error over time in more detail?

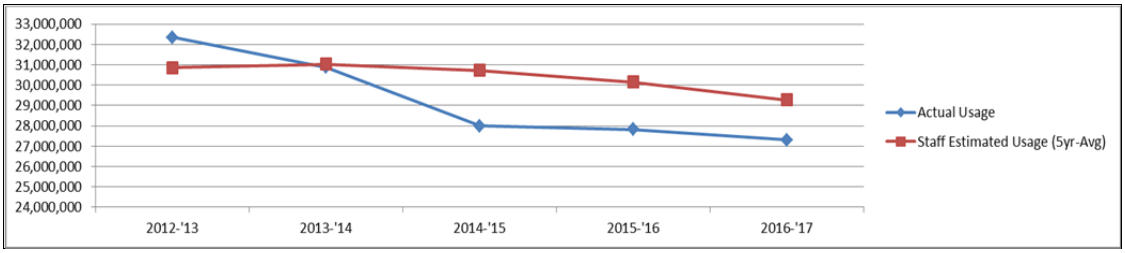
A. Yes. Again, Staff analyzed each individual system, and subsequent District(s). Line charts have been attached to this testimony as Schedule JJR-r2, detailing this analysis for District 1, District 2, and District 3. These charts represent actual usage within each District,

compared to Staff's five-year average. As the data is analyzed on a going forward basis, starting from 2012-2013 to 2016-2017, not only are Staff's five-year averages mirroring actual usage, but each years' estimated usage appears to be closer aligning with actual usage.

Q. Is there a specific data set worth noting?

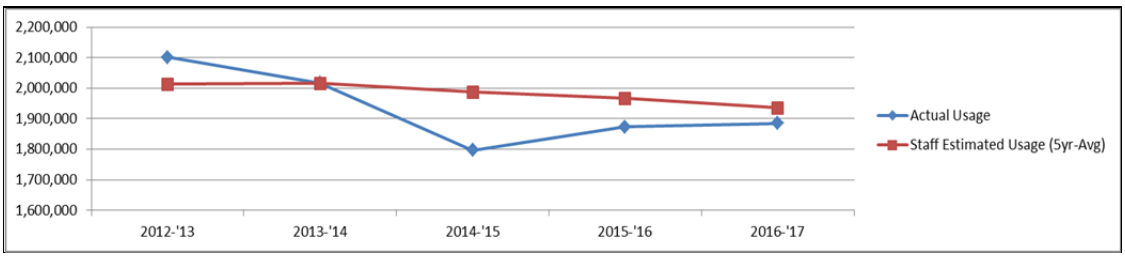
A. Yes. Please reference Schedule JJR-r2, and the corresponding line charts for District 1, District 2, and District 3.

District #1					
	2012-'13	2013-'14	2014-'15	2015-'16	2016-'17
Actual Usage	32,339,718	30,882,239	27,999,728	27,823,814	27,312,570
Staff Estimated Usage (5yr-Avg)	30,865,748	31,029,909	30,725,929	30,148,280	29,270,655



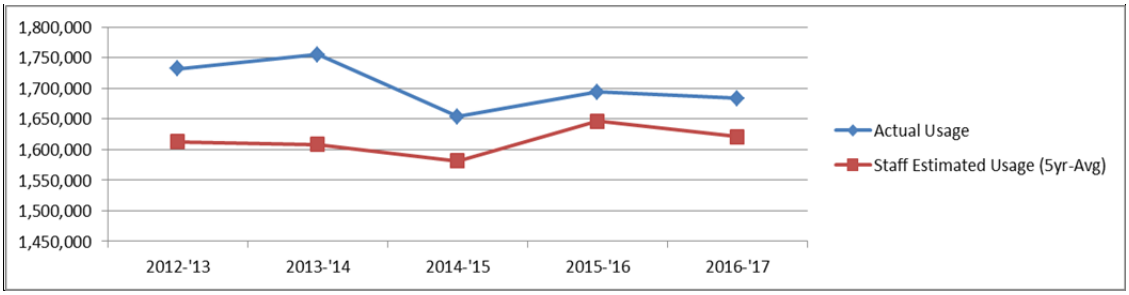
Regarding District 1: the difference between Staff's five-year average and actual usage in 2012-2013, was approximately 4.55%. In 2013-2014 that difference was approximately 0.47%; 2014-2015 the difference was approximately 9.73%; in 2015-2016 the difference was approximately 8.35%, and finally in 2016-2017 that difference was approximately 7.16%.

District #2					
	2012-'13	2013-'14	2014-'15	2015-'16	2016-'17
Actual Usage	2,101,283	2,017,752	1,797,574	1,873,361	1,885,600
Staff Estimated Usage (5yr-Avg)	2,012,755	2,016,244	1,987,300	1,966,840	1,935,114



Regarding District 2: the difference between Staff's five-year average and actual usage in 2012-2013, was approximately 4.21%. In 2013-2014 that difference was approximately 0.07%; 2014-2015 the difference was approximately 10.55%; in 2015-2016 the difference was approximately 4.98%, and finally in 2016-2017 that difference was approximately 2.62%.

District #3					
	2012-'13	2013-'14	2014-'15	2015-'16	2016-'17
Actual Usage	1,732,044	1,755,414	1,653,581	1,694,111	1,683,623
Staff Estimated Usage (5yr-Avg)	1,612,564	1,607,989	1,581,764	1,646,209	1,620,663



Regarding District 3: the difference between Staff's five-year average and actual usage in 2012-2013, was approximately 6.89%. In 2013-2014 that difference was approximately 8.39%; 2014-2015 the difference was approximately 4.34%; in 2015-2016 the difference was approximately 2.82%, and finally in 2016-2017 that difference was approximately 3.73%.

Q. Is Staff claiming that the five-year average will always be exactly accurate analysis to determine actual use?

A. No. Averages, like regression analyses, are only as good as the consistency of the data they interpret. If there is a significant change in actual usage, it can alter the results; note the dramatic change in usage for District 1, and District 2 in 2014-2015, and District 3 in 2013-2014, and how directly following those dramatic shifts in usage, Staff's five-year average continued to align with actual usage over the next two-three years. However, Staff does argue that because for the most part, the five-year average has more closely aligned to

actual customer usage, this suggests that change in customer usage is decreasing, and customer usage is stabilizing.

Q. What is Staff's recommendation?

A. Staff recommends the Commission use Staff's level of normalized residential usage.

Q. Does this conclude your rebuttal testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Missouri-American Water Company's Request for Authority to Implement General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas	)))))	Case No. WR-2017-0285

AFFIDAVIT OF JARROD J. ROBERTSON

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW JARROD J. ROBERTSON and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing Rebuttal Testimony; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

JARROD J. ROBERTSON

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 16th day of January, 2018.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: December 12, 2020
Commission Number: 12412070

Notary Public

Missouri-American Water Company

Case No. WR-2017-0285

Customer Usage Per Day

Service Area	Usage Per Day
District No. 1	0.2242
District No. 2	0.1545
District No. 3	0.1314

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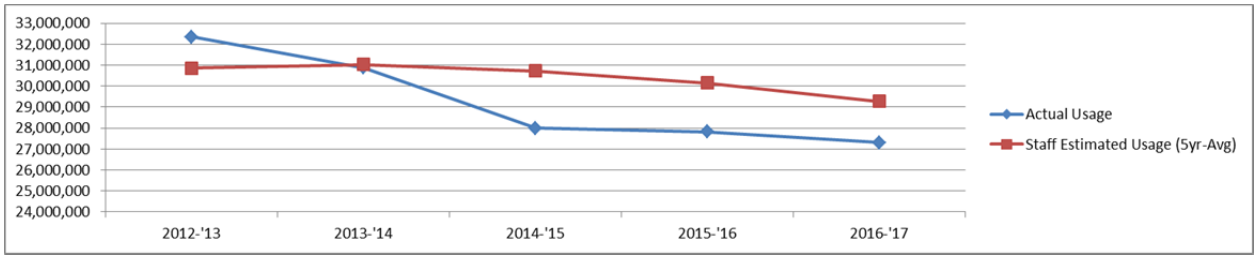

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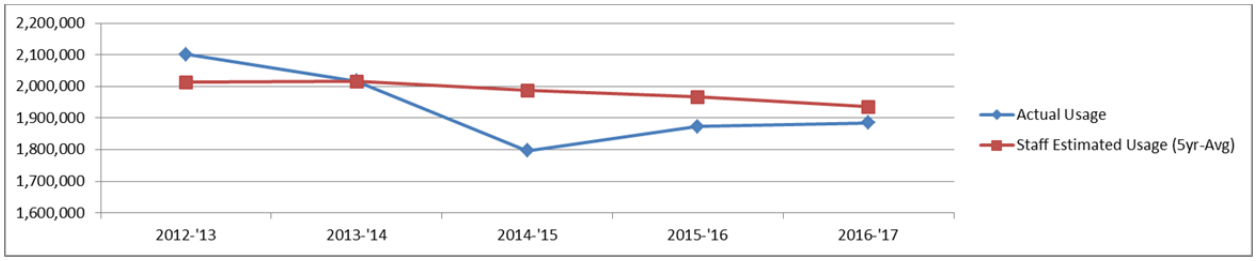

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