Exhibit No. 350

MIEC – Exhibit 350
York
Direct Testimony
File No. WR-2022-0303

Issue:	Class Cost of Service/Rate Design
Witness:	Jessica A. York
Type of Exhibit:	Direct Testimony
Sponsoring Parties:	Missouri Industrial Energy Consumers
Case Nos.:	WR-2022-0303 & SR-2022-0304
Date Testimony Prepared:	December 16, 2022

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 Nos. WR-2022-0303/ SR-2022-0304**

Direct Testimony and Schedules of

Jessica A. York

On behalf of

Missouri Industrial Energy Consumers

REDACTED VERSION

December 16, 2022

BRUBAKER & ASSOCIATES, INC.

Project 11350

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 Nos. WR-2022-0303/ SR-2022-0304**

STATE OF MISSOURI)
) **SS**
COUNTY OF ST. LOUIS)

Affidavit of Jessica A. York

Jessica A. York, being first duly sworn, on his oath states:

1. My name is Jessica A. York. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 16690 Swingley Ridge Road, Suite 140, Chesterfield, Missouri 63017. We have been retained by the Missouri Industrial Energy Consumers in this proceeding on their behalf.

2. Attached hereto and made a part hereof for all purposes is my direct testimony and schedules which were prepared in written form for introduction into evidence in the Missouri Public Service Commission, Case Nos. WR-2022-0303 & SR-2022-0304.

3. I hereby swear and affirm that the testimony and schedules are true and correct and that they show the matters and things that they purport to show.

Jessica A. York

Subscribed and sworn to before me this 16th day of December, 2022.

TAMMY S. KLOSSNER
Notary Public - Notary Seal
STATE OF MISSOURI
St. Charles County
My Commission Expires: Mar. 18, 2023
Commission # 15024862

Notary Public

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Direct Testimony of Jessica A. York

I. Introduction

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Jessica A. York. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q WHAT IS YOUR OCCUPATION?

A I am a consultant in the field of public utility regulation and an Associate at Brubaker & Associates, Inc., energy, economic and regulatory consultants.

Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A This information is included in Appendix A to my testimony.

Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A I am appearing on behalf of Missouri Industrial Energy Consumers ("MIEC"), a non-profit corporation that represents the interests of large customers in Missouri utility matters. The MIEC represents the interests of companies purchasing substantial amounts of water from Missouri-American Water Company ("MAWC" or "Company").

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A I will address the Company's class cost of service study ("COSS") and proposed revenue apportionment. I will also respond to the Company's proposal for consolidated tariff pricing ("CTP") for its operating districts throughout Missouri. For the reasons described in my testimony, I recommend that the Company's proposal for consolidated pricing be rejected, and that the Company maintain the two-district structure (St. Louis County, and Non-St. Louis County) agreed upon in the settlement, which was approved by the Missouri Public Service Commission ("Commission") in the Company's last rate case.

My silence on any issues addressed by the Company's testimony should not be taken as tacit approval or agreement regarding those issues.

Q PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.

A My conclusions and recommendations are as follows:

- I recommend the Commission reject MAWC's proposed revenue spread, as it is based on flawed and inaccurate COSS models.
- I recommend the Commission reject MAWC's proposal to continue consolidating rates for customers located inside and outside of St. Louis County. CTP violates cost causation principles, could erode system efficiency, and may reduce the incentive for MAWC to perform due diligence before acquiring additional water systems.
- I recommend the following corrections to MAWC's COSS model for St. Louis County:
    - I recommend that Purchased Power expenses be allocated using Factor 6, instead of Factor 1.
    - I recommend that fixed Power and Pumping expenses be allocated using Factor 3, instead of Factor 2.
    - I recommend that the Rate J distribution multiplier used to develop Factor 4 be corrected to reflect the length of distribution mains serving these customers, rather than being based on water consumption as proposed by MAWC.

- I recommend that depreciation expense and plant investment in mains sized 10-inches to 16-inches be assigned to the Distribution functional cost category instead of Transmission, consistent with the classification of mains in MAWC's annual reports.

- Based on my corrections to MAWC's COSS, and the rejection of CTP, I recommend a revenue spread where no class receives an increase greater than 1.25 times the district average.

- If my corrections to the MAWC's COSS are not adopted, I continue to recommend that no class receive a rate increase greater than 1.25 times the district average.

II. MAWC's Proposed Revenue Apportionment

Q HOW DO THE RESULTS OF MAWC'S COSS MODELS COMPARE TO ITS PROPOSED SPREAD OF THE CLAIMED REVENUE DEFICIENCY ACROSS CUSTOMER CLASSES?

A Table 1, below, compares MAWC's COSS results to its proposed revenue apportionment by customer class and district.

TABLE 1

MAWC's COSS vs. Proposed Revenue Spread

Line	Customer Class	Current Revenue[1]	Increase to Reach COS[1] Amount	Percent	Index[3]	MAWC Proposed Increase[2] Amount	Percent	Index[3]
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
	St. Louis County							
1	Residential	$ 167,224,457	$ 68,650,658	41.1%	1.00	$ 80,727,726	48.3%	1.00
2	Non-Residential	49,403,315	17,498,662	35.4%	0.86	25,506,820	51.6%	1.07
3	Rate J	6,252,876	5,514,402	88.2%	2.14	4,076,417	65.2%	1.35
4	Rate B	4,232,070	515,600	12.2%	0.30	1,041,295	24.6%	0.51
5	Rate P	3,977,486	2,643,997	66.5%	1.61	-	0.0%	-
6	Private Fire	3,759,239	1,901,207	50.6%	1.23	1,712,529	45.6%	0.95
7	Total	$ 234,849,443	$ 96,724,526	41.2%	1.00	$ 113,064,788	48.1%	1.00
8	Proposed Increase More / (Less) than COSS Increase					$ 16,340,262	16.9%	
	Other							
9	Residential	$ 48,975,492	$ 30,726,037	62.7%	1.12	$ 17,902,209	36.6%	1.00
10	Non-Residential	21,037,197	6,845,848	32.5%	0.58	8,195,946	39.0%	1.06
11	Rate J	9,050,666	2,863,757	31.6%	0.57	3,052,073	33.7%	0.92
12	Rate B	3,006,411	1,279,510	42.6%	0.76	753,746	25.1%	0.69
13	Rate P	1,113,066	2,612,936	234.8%	4.20	422,329	37.9%	1.04
14	Private Fire	1,441,810	2,976,837	206.5%	3.69	646,430	44.8%	1.22
15	Total	$ 84,624,643	$ 47,304,925	55.9%	1.00	$ 30,972,733	36.6%	1.00
16	Proposed Increase More / (Less) than COSS Increase					$ (16,332,192)	-34.5%	
17	**Total Water**	$ 319,474,085	$ 144,029,451	45.1%		$ 144,037,521	45.1%	

Sources

[1] MAWC's COSS models. Schedule WES-1 and WES-2.

[2] CAS 11 and CAS 12.

[3] Index relative to district average increase.

As shown in the table, MAWC's proposed revenue apportionment does not follow the results of its COSS models. The Company proposes to shift about $16.3 million to St. Louis County water customers from customers outside of St. Louis County, in an effort to continue moving toward CTP. As a result, St. Louis County residential, non-residential, and Rate B customers would be paying rates significantly in excess of MAWC's cost of providing service to them.

The Company's St. Louis County COSS model indicates that the Rate J class requires an increase of 88.2%, or 2.14 times the district average to reach cost of

service. MAWC's COSS models show that Rate J customers outside of St. Louis County would require an increase of 31.6% or 0.57 times the district average to reach cost of service. In total, the Rate J class would require a 54.7% increase, or 1.21 times the system average to reach cost of service, under the Company's proposed COSS models.

Under the Company's proposed revenue spread, St. Louis County Rate J customers would receive an increase of about 65.2%, or 1.35 times the district average increase, while Non-St. Louis County Rate J customers would receive an increase of 33.7%, or 0. 92 times the district average increase of 36.6%.

Q DO YOU AGREE WITH THE COMPANY'S PROPOSED REVENUE APPORTIONMENT?

A No. The Company's proposed revenue apportionment is based on inaccurate COSS models that need to be corrected. In addition, MAWC's proposed revenue apportionment reflects continued movement toward CTP, which I do not support.

Q ARE YOU RECOMMENDING AN ALTERNATIVE REVENUE APPORTIONMENT?

A Yes. I am recommending an alternative revenue apportionment for St. Louis County customer classes based on my corrections to the Company's COSS model, and my recommendation to reject CTP in favor of maintaining the existing two-district structure, with rates based on each district's respective COSS, as was agreed upon and approved by the Commission in the last rate case. My primary recommended revenue apportionment is shown below in Table 2, using the Company's claimed revenue requirement.

TABLE 2

MIEC's COSS vs. Primary Proposed Revenue Spread for St.Louis County

Line	Customer Class	Current Revenue[1]	Increase to Reach COS[1] Amount	Percent	Index	MIEC Proposed Increase[2] Amount	Percent	Index
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
	St. Louis County							
1	Residential	$ 167,224,457	$ 74,419,119	44.5%	1.08	$ 74,419,119	44.5%	1.08
2	Non-Residential	49,403,315	18,028,920	36.5%	0.89	18,560,733	37.6%	0.91
3	Rate J	6,252,876	1,250,370	20.0%	0.49	1,317,680	21.1%	0.51
4	Rate B	4,232,070	(481,902)	-11.4%	(0.28)	(436,345)	-10.3%	(0.25)
5	Rate P	3,977,486	885,183	22.3%	0.54	928,000	23.3%	0.57
6	Private Fire	3,759,239	2,622,836	69.8%	1.69	1,935,339	51.5%	1.25
7	Total	$ 234,849,443	$ 96,724,526	41.2%	1.00	$ 96,724,526	41.2%	1.00

Sources

[1] Schedule JAY-1.

[2] No class receives an increase greater than 1.25x district average. Remaining revenue deficiency is spread uniformly across non-capped classes with increases below the system average.

If my recommended corrections to MAWC's COSS are adopted, I recommend bringing all classes closer to cost of service, subject to the limitation that no class receive an increase greater than 1.25 times the district average. The Company proposed no rate change for St. Louis County Rate P customers, but the tariff does not suggest Rate P customers are precluded from rate changes. In the event that Rate P must receive no rate change, I recommend the alternative revenue apportionment shown in Table 3.

TABLE 3

MIEC's COSS vs. Alternative Proposed Revenue Spread for St.Louis County

Line	Customer Class	Current Revenue[1]	Increase to Reach COS[1] Amount	Percent	Index	MIEC Proposed Increase[2] Amount	Percent	Index
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
	St. Louis County							
1	Residential	$ 167,224,457	$ 74,419,119	44.5%	1.08	$ 74,419,119	44.5%	1.08
2	Non-Residential	49,403,315	18,028,920	36.5%	0.89	19,326,263	39.1%	0.95
3	Rate J	6,252,876	1,250,370	20.0%	0.49	1,414,572	22.6%	0.55
4	Rate B	4,232,070	(481,902)	-11.4%	(0.28)	(370,767)	-8.8%	(0.21)
5	Rate P	3,977,486	885,183	22.3%	0.54	-	0.0%	-
6	Private Fire	3,759,239	2,622,836	69.8%	1.69	1,935,339	51.5%	1.25
7	Total	$ 234,849,443	$ 96,724,526	41.2%	1.00	$ 96,724,526	41.2%	1.00

Sources

[1] Schedule JAY-1.

[2] Rate P receives no change. No class receives an increase greater than 1.25x district average. Remaining revene deficiency spread uniformly across Non-Residential, Rate J and Rate B.

In the event that my corrections to MAWC's are not adopted, I continue to recommend that no class receive an increase greater than 1.25 times the system average. Such an increase will still make a movement toward cost of service, while mitigating rate shock.

III. MAWC's Class Cost of Service Study

Q DID YOU REVIEW MAWC'S CLASS COST OF SERVICE STUDIES SPONSORED BY MR. WESLEY SELINGER?

A Yes. His class cost of service studies are based on the future test year ended May 31, 2023, and use the widely accepted Base-Extra Capacity method for functionalizing, classifying and allocating costs to MAWC's various customer classes. Investment in water utility plant and operating costs are first functionalized according to the role they play in providing water service: water supply, pumping, treatment, transmission, distribution, metering and billing. Next, these costs should be classified into cost

categories that reflect the causation of these costs: Base, or average day rates of flow; Extra Capacity-Maximum Day and Extra Capacity-Maximum Hour rates of flow; and Customer-related costs, such as metering and billing. However, as will be discussed in greater detail below, MAWC's COSS model no longer explicitly shows this step of the COSS process.

Q IS MAWC'S CLASS COST OF SERVICE STUDY REASONABLE?

A In general, the Base-Extra Capacity cost allocation method is a reasonable approach. However, I recommend correcting the allocation of Fuel and Power expenses from Factor 1 to Factor 6. I recommend correcting the allocation of fixed Power and Pumping expenses from Factor 2 to Factor 3. Factors 1, 2, 3 and 6 are discussed below in greater detail.

In addition, I recommend correcting the distribution multiplier for Rate J customers in the COSS models, and assigning the depreciation expenses and investment in mains sized 10-inches to 16-inches to the distribution function, instead of transmission.

III.A. Purchased Power Expense Allocation

Q HOW HAS MR. SELINGER ALLOCATED FUEL AND POWER EXPENSES IN HIS COSS MODELS?

A Mr. Selinger used Factor 1 to allocate purchased power costs between customer classes. Mr. Selinger's Factor 1 allocates purchased power costs between customer classes based on each class's annual (or average daily) consumption. Mr. Selinger

describes Factor 1 as one that allocates costs that vary with the amount of water produced and consumed.[1]

Q WHY IS IT INACCURATE TO USE FACTOR 1 TO ALLOCATE FUEL AND POWER EXPENSES BETWEEN RATE CLASSES?

A The use of Factor 1 does not recognize how MAWC incurs purchased power expense. Purchased power expense is based on demand and energy consumption. Demand costs are based on the highest power demand in a month, not on average daily usage. Therefore, the demand component of purchased power expense does not vary with the amount of water consumed. Instead, it varies with the peak day and peak hour power consumption.

In addition, the energy consumption portion of purchased power costs also varies with time and seasonal use, and does not vary evenly with the daily amount of water consumed. MAWC purchases power from Ameren Missouri for its St. Louis County operations. Ameren Missouri's tariffs contain seasonally differentiated energy charges for all rate schedules, and seasonally differentiated demand charges for commercial and industrial customers with meters capable of measuring demand. Ameren Missouri's energy charges and demand charges are higher during the summer months of June through September than in the non-summer months.

Thus, Ameren Missouri's commercial rates for St. Louis County customers reflect the variation of energy prices based on when energy is actually consumed, and the variability of energy costs across peak and non-peak periods.[2] As such, Missouri-

[1]Direct Testimony of Wesley Selinger at 8.

[2]Ameren Missouri tariffs for Small General Service, Large General Service, Small Primary Service, Large Primary Service, and Large Transmission Service. Rates effective February 28, 2022.

American's cost of energy within its purchased power expense does not evenly vary across all water consumed, but rather the price increases during peak periods and summer season, and is lower during the off-peak periods and winter season.

Q WHAT FACTOR SHOULD BE USED TO ALLOCATE FUEL AND PURCHASED POWER COSTS IN MR. SELINGER'S COST OF SERVICE STUDY?

A The use of Factor 6 is more appropriate and more accurately allocates purchased power expense between customer classes. Factor 6 allocates costs between customer classes based on average flow, and peak day and peak hour demand. Average daily usage reasonably allocates a portion of the energy component of purchased power, and peak day and peak hour factors correspond to the demand component and higher on-peak energy prices that correspond to MAWC's purchased power expense during peak consumption periods.

Thus, Factor 6 more accurately allocates purchased power expense between customer classes based on how MAWC incurs purchased power expense to meet the seasonal, monthly and daily water demand of its customers.

III.B. Fixed Power and Pumping Expense Allocation

Q WHY SHOULD FIXED POWER AND PUMPING COSTS BE ALLOCATED USING FACTOR 3?

A In this case, MAWC allocated fixed Power and Pumping expenses using Factor 2. Factor 2 recognizes each class's average load and its peak day requirements. Historically, these costs have been allocated using Factor 3.[3] Factor 3 is appropriate

[3]Case No. WR-2017-0285, Direct Testimony of Constance Heppenstall, Schedule CEH-1.

because it reflects a component for fire protection. Pumping plant must be designed to meet the peak demand requirements of its customers, and also to provide pressure and flow rates required to fight fires. By using Factor 2, MAWC fails to allocate any of the fixed Power and Pumping expenses to fire protection. MAWC's Power and Pumping costs should continue to be allocated using Factor 3, and MAWC agreed that Factor 3 is appropriate for the allocation of these expenses in its response to Discovery Request MIEC 3-01.[4]

III.C. Rate J Distribution Multiplier

Q PLEASE DISCUSS THE DISTRIBUTION MULTIPLIER USED BY MAWC IN ITS COSS MODELS.

A The Company's COSS models recognize that some large customers take service directly from the transmission mains, and therefore it would not be appropriate to allocate costs related to the smaller diameter distribution system to these customers.[5] MAWC has developed a distribution multiplier to adjust the water sales for the Rate J and Sales for Resale customers, such that only the distribution-level sales in each class are allocated distribution-related costs.[6] I support MAWC's recommendation to continue reflecting a distinction in the size of mains used to provide service in the allocation of distribution costs in its COSS models. However, I disagree with the method that MAWC has used to accomplish this objective.

[4]Attached as Schedule JAY-2, pages 1 and 2.
[5]Selinger Direct Testimony at 11.
[6]Ibid.

Q WHAT IS THE DISTRIBUTION MULTIPLIER THAT MAWC HAS APPLIED TO THE RATE J AND SALES FOR RESALE (RATE B) CLASSES?

A In St. Louis County, MAWC has applied a distribution multiplier of 0.44 to the Rate J class's average hourly usage to develop its maximum hour usage for use in allocating distribution costs.[7] For Rate B customers, MAWC has applied a distribution multiplier of 0.21.[8]

Outside of St. Louis County, the Rate J distribution multiplier is 0.11 and the Rate B distribution multiplier is 0.56.[9]

Q HOW DID MAWC DEVELOP THESE DISTRIBUTION MULTIPLIERS?

A The calculation of MAWC's distribution multipliers was provided in the response to Discovery Request MIEC 2-05, and MoPSC 243.[10] As shown in the associated attachment, MAWC reviewed annual water usage for the top 50 largest Rate J and Rate B customers in its service territory. The Company also reviewed the sizes of mains used to serve each of the top 50 customers' annual water usage. MAWC then developed a ratio of annual usage served by distribution mains, relative to total usage, for the St. Louis County Rate J and Rate B customers in this subset, as well as for the Rate J and Rate B customers outside of St. Louis County.

[7]Schedule WES-1, Usage Statistics tab, page 1 of 2.
[8]Ibid.
[9]Schedule WES-2, Usage Statistics tab, page 1 of 2.
[10]Attached as Schedule JAY-2 at pages 3-5.

Q DO YOU AGREE THAT THE DISTRIBUTION MULTIPLIER SHOULD BE BASED ON USAGE SERVED BY DISTRIBUTION MAINS?

A No. Using water consumption to develop the distribution multiplier significantly overstates the portion of distribution system investment and expenses that is required to provide service to these large customers. MAWC needs to also consider the length of distribution main serving the Rate J customers. In the past, it was determined that while Rate J customers have a significant portion of water consumption served by small distribution mains, the actual length of distribution mains used to connect these customers to the transmission system represents a very small fraction of the total distribution system, and this should be recognized in developing a distribution multiplier.

Q WHAT WAS THE DISTRIBUTION MULTIPLIER IN MAWC'S PRIOR RATE CASES?

A In the last case, Case No. WR-2020-0344, Staff reflected a distribution multiplier of about 0.10 for Rate J customers both inside and outside of St. Louis County.[11] The 10 percent distribution multiplier was developed by MAWC witness Paul Herbert in Case No. WR-2008-0311.

Q WHAT WAS THE BASIS FOR THE 10% DISTRIBUTION MULTIPLIER IN THE PRIOR CASES?

A In Case No. WR-2008-0311, MAWC witness Paul Herbert developed the 10% distribution multiplier for Rate J customers in St. Louis County. For the industrial or Rate J classification, an analysis of the customers was performed to determine the size

[11]Case No. WR-2020-0344. Staff's report on cost of service and rate design. St. Louis County usage adjustments are shown on Schedule 7, page 7 of 10, line 32. Non-St. Louis County usage adjustments are shown on Schedule 7, page 2 of 10, line 32.

of main each Rate J customer was served from.[12] The analysis showed that out of 215 Rate J customers, 112 customers representing 61.8% of the Rate J consumption are connected to mains 12-inch and larger.[13] The remaining 103 customers with 38.2% of the consumption were connected to mains smaller than 12-inch.[14]

For the 103 customers served from small mains, Mr. Herbert analyzed the length of distribution mains used to serve these customers from the transmission system.[15] The analysis showed that only about 225,000 feet of small mains were used from the transmission system to the connection points of the 103 Rate J customers.[16] The 225,000 feet represented about 1.3% of the total feet of distribution mains on the system at the time.[17] Mr. Herbert concluded that the analysis showed that although certain Rate J customers are connected to smaller mains, the length of those mains are only a small fraction of the total distribution main system.[18] As a result, Mr. Herbert ultimately recommended a 10% distribution multiplier, but his testimony does not explicitly explain how he arrived at 10%.[19]

Q DO YOU AGREE WITH THE 10% DISTRIBUTION MULTIPLIER RECOMMENDED BY PAUL HERBERT, AND RELIED ON IN COST OF SERVICE STUDIES IN PRIOR RATE CASES?

A No. The 10 percent distribution multiplier appears to be arbitrary, and still overstates the costs associated with the distribution system that are incurred to serve Rate J

[12]Case No. WR-2008-0311, Direct Testimony of Paul Herbert at 10.
[13]Ibid.
[14]Ibid.
[15]Ibid.
[16]Ibid.
[17]Ibid.
[18]Ibid.
[19]Ibid.

customers. I recommend that the distribution multiplier be based on the length of small distribution mains required to provide service to Rate J customers.

Q HAVE YOU RECALCULATED THE DISTRIBUTION MULTIPLIER BASED ON THE LENGTH OF DISTRIBUTION MAINS ON MAWC'S SYSTEM?

A Yes. I am not aware of an updated study of the length of small distribution mains used to connect Rate J customers to the transmission system. Thus, I have assumed 225,000 feet of small distribution mains, based on the study completed for the 2008 rate case. The length of distribution mains in St. Louis County is 21,706,675 feet.[20] The ratio of 225,000 to 21,706,675 is 1.04 percent.

A Rate J distribution multiplier of 1.04 percent is likely conservative, given that the number of Rate J customers has decreased since the 2008 rate case.[21] This means that the length of distribution mains serving Rate J customers may be less than 225,000 feet, and the current distribution multiplier may be less than 1.04 percent.

A similar analysis should be performed for customers outside of St. Louis County.

III.D. Transmission and Distribution Cost Allocation

Q WHAT IS YOUR CONCERN WITH RESPECT TO THE TRANSMISSION AND DISTRIBUTION COST CATEGORIES?

A MAWC's COSS model for St. Louis County identifies a Transmission function cost of service of $52,498,217, and a Distribution function cost of service of $104,250,210.[22]

[20]Schedule WES-1, Usage Statistics tab, page 2 of 2.

[21]Case No. WR-2008-0311 identifies 215 Rate J customers in St. Louis County. Case No. WR-2022-0303, Schedule WES-1, Usage Statistics tab, page 1 identifies 135 Rate J customers in St. Louis County.

[22]Schedule WES-1, Summary tab, page 1 of 1.

Thus, MAWC's COSS shows that about 33.5% of the Transmission and Distribution cost of service is related to Transmission, and 66.5% is related to Distribution. Transmission costs are allocated by MAWC using Factor 3. Distribution costs have been allocated by MAWC using Factor 4, which reflects the distribution multiplier that I have previously discussed.

My concern is that MAWC has overstated the amount of costs that should be included in the Transmission function.

Q WHY DO YOU SAY THAT MAWC HAS OVERSTATED THE AMOUNT OF COSTS INCLUDED IN THE TRANSMISSION CATEGORY?

A MAWC's 2021 Annual Report shows that in St. Louis County, there are 2,268,236 feet of transmission mains and 21,706,675 feet of distribution mains installed on the system.[23] This is consistent with the length of main for St. Louis County shown on Schedule WES-1, Usage Statistics tab, page 2, which is used to assign costs to the Transmission and Distribution functions in the COSS model.

According to the 2021 Annual Report, transmission mains include mains with diameters of size 16-inches and larger, while distribution mains consist of mains sized 12-inches and less. However, MAWC's COSS assigns a significant amount of depreciation expense and plant investment for distribution mains sized 10-inches to 16-inches to the Transmission function, instead of the Distribution function. Specifically, MAWC assigns $4.708 million of distribution-related depreciation expense to the Transmission function, and $294.653 million of distribution plant investment to the Transmission function.[24]

[23]Attached as Schedule JAY-3, pages 1-3.
[24]Schedule WES-1, Account Detail tab, page 4, and 7, respectively.

Q WHAT IS YOUR RECOMMENDATION TO CORRECT THIS ISSUE?

A I recommend moving the depreciation expense and plant investment associated with the category of mains sized 10- to 16-inches from the Transmission function to the Distribution function. This change improves the consistency between the COSS models, and the 2021 Annual Report, in terms of the classification of various sizes of mains between the Transmission and Distribution functions. In addition, it results in about 14.2% of total Transmission and Distribution functional costs being Transmission related, and 85.8% being Distribution related. This is much more closely aligned with the proportions of length of main, as well.

Q DO YOU HAVE ANY OTHER OBSERVATIONS WITH RESPECT TO THE ALLOCATION OF TRANSMISSION AND DISTRIBUTION COSTS IN THE COSS MODELS?

A Yes. In past rate cases, such as Case No. WR-2017-0285, Transmission and Distribution costs were not separated between the two functions. Instead, these costs remained combined into a single category, and were allocated using Factor 6. Factor 6 was a weighted combination of Factor 3 and Factor 4, with the weights being based on the length of transmission and distribution mains installed on the system.

Transmission and Distribution costs are reported on a combined basis in MAWC's Annual Reports, and MAWC confirmed in a discovery response that the separation of Transmission and Distribution costs in the COSS is done with the use of an allocator, instead of based on direct assignments to these functions.[25] Therefore, as acknowledged by MAWC, the split of these costs between the two functions is

[25]MAWC's response to Discovery Request MIEC 3-04, attached as Schedule JAY-2 at pages 6-8.

largely an estimate, and may not be accurate, or consistent with the methods used in the Company's prior rate case COSS models.

If Factor 6 was used to allocate the functionalized Transmission and Distribution costs in this case, along with the other adjustments discussed herein, the required increase for Rate J customers in St. Louis County would be about 13.2%, instead of the 20% increase shown in Table 2.

III.E. General Comments on MAWC's COSS Models

Q DO YOU HAVE ANY OTHER CONCERNS ABOUT THE COMPANY'S COSS MODELS?

A Yes. The Company has changed the structure of its COSS models since Case No. WR-2017-0285. The new structure of the COSS was introduced in the prior rate case, Case No. WR-2020-0344. However, the new model was not approved by the Commission, as the parties reached a settlement, which relied on Staff's COSS modeling. It is not clear whether or to what extent MAWC has benchmarked the accuracy of the new model structure with the previous one, to verify that the two versions produce consistent results by customer class. MIEC has issued some discovery requests on this topic, but responses will not be due until after this testimony is filed.

Q PLEASE DISCUSS THE CHANGE IN STRUCTURE OF MAWC'S COSS MODELS IN THIS CASE RELATIVE TO PRIOR CASES.

A MAWC has simplified its COSS models, which may not fully capture cost-causing differences among customers that should be recognized. This is a change from the detailed COSS models that were provided prior to the last rate case. It is difficult to

reconcile MAWC's studies in this case with the model provided in Case No. WR-2017-0285 to confirm that costs have been functionalized, classified and allocated consistently, and in accordance with the Base-Extra Capacity method.

In past COSS models, the process of functionalizing and classifying costs was very clear, and one could assess the reasonableness of MAWC's selected allocation factors. In this simplified model, MAWC does not show how each cost is allocated to the Base, Maximum Day, Maximum Hour, Meters, Services, Billing and Collecting, and Fire Service functional cost components, as described in the American Water Works Association's ("AWWA") M-1 Manual. Instead, MAWC develops a total revenue requirement by business function. The business functions identified by MAWC do not completely align with the standard functional cost components described by the AWWA M-1 Manual. MAWC then allocates each business function's revenue requirement to its customer classes based on a single, externally developed, allocation factor.

Q HAS THE REQUIRED INCREASE FOR RATE J TO REACH COST OF SERVICE, RELATIVE TO THE SYSTEM AVERAGE INCREASE, GENERALLY BEEN CONSISTENT BETWEEN CASES?

A No. While there may be some variation between rate cases in the relative increase required for Rate J to reach cost of service, the variations between cases that I have observed are extreme. For example, the St. Louis County COSS in this case shows that the Rate J class needs a 2.14 times system average increase (88.2%) to reach parity. In the Staff's COSS model in Case No. WR-2017-0285, the St. Louis County Rate J class required an increase of 0.94 times the system average.[26] The Staff's

[26]Case No. WR-2017-0285. Staff's report on cost of service and rate design. Schedule 1, page 1 of 3. Rate J customers in St. Louis County required an increase of 2.36% to reach cost of service, relative to a system average of 2.50%, for an index of 0.94 times system average.

COSS model in the last case (Case No. WR-2020-0344), showed that Rate J required a rate reduction of 12.34%, about 3.34 times larger than the St. Louis County district average rate reduction of 3.66%.[27]

On a combined basis (i.e. St. Louis County and Other Missouri), the COSS models in the current case show that the Rate J class requires an increase of 1.21 times the system average to reach cost of service.[28] In WR-2017-0285, the combined Rate J class required an increase of 0.52 times the system average.[29]

Given the results of the more detailed COSS models provided by Staff in Case No. WR-2020-0345 and by the Company in Case No. WR-2017-0285, it is questionable that Rate J customers in St. Louis County would now require an increase of 2.14 times the district average, or 88.2%.

Q HAS THE COMPANY OFFERED ANY INSIGHT INTO THE DRIVERS OF THE SIGNIFICANT RATE J INCREASE IN ST. LOUIS COUNTY?

A No. In Discovery Request MIEC 3-01,[30] MIEC asked MAWC to provide a detailed explanation of the drivers of the 88.2% increase for Rate J in St. Louis County. The Company responded by referring to the $769 million of capital investment it has or will invest since the 2020 rate case, by the operation of law date in this case.[31]

[27]Case No. WR-2020-0344. Staff's St. Louis County COSS model workpaper, Schedule 1-WD2 Proposed Rate Summary.

[28]See Table 1. The total Rate J increase required to reach cost of service based on MAWC's models is $8.4 million (sum of lines 3 and 11), or 54.7%. This is 1.21 times the system average of 45.1%.

[29]Case No. WR-2017-0285, Direct Testimony of Constance Heppenstall, Schedule CEH-1. Rate J needed an increase of 17.1% to reach cost of service, relative to a system average increase of 33%, for an index of 0.52 times the system average.

[30]Attached as Schedule JAY-2 at page 1.

[31]Ibid.

Q DOES THE COMPANY'S REFERENCE TO THE $769 MILLION OF INVESTMENT ADEQUATELY EXPLAIN WHY ST. LOUIS COUNTY RATE J CUSTOMERS REQUIRE AN 88.2% INCREASE TO REACH COST OF SERVICE IN THIS CASE?

A No. The Company has not explained what portion of this investment was associated with the water system in St. Louis County, as opposed to being invested outside of St. Louis County, or in the wastewater system. MAWC also did not provide any details about whether the investment was primarily in the distribution system, transmission system, storage, or production facilities. To the extent that a significant portion of investment has been in small distribution mains in St. Louis County, and given that the Rate J class is primarily served from the transmission system, it does not seem logical that investment in the distribution system would be driving the Rate J increase in St. Louis County to more than double the system average.

Q HAVE YOU PREPARED A SCHEDULE THAT SHOWS THE RESULTS OF YOUR CORRECTIONS TO THE ST. LOUIS COUNTY COSS MODEL?

A Yes. Schedule JAY-1 shows the results of my corrections to MAWC's COSS for St. Louis County. If my corrections are adopted, similar corrections should be applied to the COSS for customers outside of St. Louis County as well.

Q PLEASE SUMMARIZE YOUR RECOMMENDATIONS WITH RESPECT TO COST OF SERVICE AND REVENUE SPREAD.

A For the reasons described above, the Company's COSS models are inadequate, inaccurate, and require several corrections. I recommend correcting the allocation of Purchased Power expense to use Factor 6 instead of Factor 1. I recommend allocating fixed Power and Pumping costs using Factor 3, instead of Factor 2. I recommend

correcting the distribution multiplier for the Rate J class in St. Louis County to 1.04 percent. Lastly, I recommend functionalizing the depreciation expense and plant investment in mains sized 10-inches to 16-inches as distribution, rather than transmission. These corrections would also need to be made to the COSS for customers outside of St. Louis County.

MIEC would welcome the opportunity to discuss these proposed changes to the COSS with the Company, Staff, Office of the Public Counsel, and any other interested party, in the interest of seeking a joint resolution to these COSS modeling issues.

Due to the inadequacy of MAWC's COSS in this case, it should not be relied upon as the basis for spreading the Company's claimed revenue deficiency across customer classes in this case. If MIEC's recommended corrections to the COSS are adopted, I recommend bringing the St. Louis County customer classes closer to cost of service based on the results of my corrected COSS model, as described in Section II of my testimony.

IV. Company's Proposal for Consolidated Tariff Pricing

Q PLEASE DESCRIBE MAWC'S PROPOSAL FOR CONSOLIDATED TARIFF PRICING.

A As discussed in the direct testimony of Mr. Rea, the Company is proposing to continue its movement toward CTP. Specifically, the Company proposes to equalize the volumetric rates for Rate A between St. Louis County and non-St. Louis County customers to complete the process of CTP for those rates.[32] Mr. Rea also notes that the Company is proposing to move Rate J rates closer together by increasing Rate J

[32]Direct Testimony of Charles Rea at 10.

for St. Louis County customers by 200% of the increase for non-St. Louis County customers.[33]

Q WHAT REASONS DOES MR. REA PROVIDE IN SUPPORT OF THE COMPANY'S PROPOSAL FOR CTP?

A Mr. Rea's comments on CTP are limited to the Company's intention for rate design, and he does not offer specific evidence in support of continuing the movement toward CTP.

Q DO YOU SUPPORT THE COMPANY'S PROPOSAL TO CONTINUE MOVING TOWARD CTP?

A No. CTP violates cost-causation principles. I recommend the Commission reject any further consolidation of MAWC's districts and customer classes.

Q HOW WOULD CONSOLIDATION AFFECT THE TWO EXISTING DISTRICTS? ARE THE ST. LOUIS COUNTY AND NON-ST. LOUIS COUNTY DISTRICTS RECEIVING SERVICE UNDER SUBSTANTIALLY SIMILAR CONDITIONS OR CIRCUMSTANCES?

A No. A statewide consolidation would result in St. Louis County customers subsidizing customers outside of the County. As shown in Table 1, MAWC proposes to shift about $16.3 million from the non-St. Louis County district to customers inside of St. Louis County. In addition, St. Louis County customers use significantly higher levels of water

[33] *Id.* at 11.

than other customers.[34] A significant level of MAWC's proposed revenue requirement is collected through usage-based rates. Given their higher usage, St. Louis County customers would be paying a significant level of fixed costs incurred to serve customers outside of their district.

If rates were consolidated, current St. Louis County customers would be significantly subsidizing Non-St. Louis County customers. This would not reflect cost-causation.

Q WHY DID THE COMMISSION DETERMINE IN CASE NO. WR-2017-0285, THAT ST. LOUIS COUNTY SHOULD REMAIN A SEPARATE DISTRICT?

A In that case, the Commission rejected MAWC's proposal to implement consolidated pricing and instead utilize two districts. Specifically, the Commission found that:

> "Full consolidation would increase the potential for imprudent spending by MAWC, since the impact of increases will be shared by more customers. By combining Districts 2 and 3, the Company can still seek to acquire small struggling systems and make system improvements while avoiding rate shock."[35]

Q IS THE COMMISSION'S REASONING FROM THE PRIOR RATE CASE STILL VALID?

A Yes.

[34]For example, St. Louis County's average monthly Residential use per customer is approximately 50% higher than Residential use per customer outside of St. Louis County. Average monthly use per customer for commercial, industrial, and sales for resale customers in St. Louis County exceeds the average monthly use of customers outside St. Louis County by about 279%.

[35]Case No. WR-2017-0285. Final Order at 30-31.

Q DOES CTP FOLLOW COST-CAUSATION PRINCIPLES?

A No. In general, the proposal for CTP ignores the principle of cost-causation. A particular water district's rates should be based on the costs that MAWC incurs to provide that district with service. MAWC's water system is not an integrated system. CTP ignores the fact that not all of MAWC's water districts are interconnected and thus the Company cannot serve all of its districts with the same group of water treatment plants or other plant investment.

Q ARE YOU AWARE THAT CURRENTLY THE NON-ST. LOUIS COUNTY DISTRICT IS COMPOSED OF SEVERAL WATER DISTRICTS THAT HAVE ALREADY BEEN CONSOLIDATED FOR TARIFF PRICES?

A Yes. To be clear, I am not proposing the Commission reverse its previous decision to have two districts. However, the move to consolidation of the two remaining districts should be rejected.

Q PLEASE ELABORATE ON WHY CTP IGNORES COST-CAUSATION PRINCIPLES AND IS NOT REASONABLE.

A In general, consolidated pricing is inappropriate for several reasons. First, the districts are not interconnected to the same (or group of same) water treatment plants. Water treatment plants serving the districts are supplied from district-specific raw water sources (including both groundwater and surface water), which impact water treatment costs. In contrast to power plants in a geographically dispersed, but interconnected electric system, a water treatment plant in Joplin or St. Joseph, for example, cannot provide treated water to the St. Louis County district since those districts are not interconnected. The water treatment plants, distribution networks, pumping equipment

and even the electric utilities serving the various MAWC territories are distinct across the state, and the various geographic characteristics of each MAWC service territory impact costs related to storage, pressure, pumping, chemicals and other costs associated with providing water service in those areas.

Second, consolidated pricing ignores the differences in costs of providing service in each non-interconnected water district including, but not limited to, water treatment and supply, labor force, and delivery. Consolidated pricing also ignores the differences in rate base investment that have occurred to provide water service in each operating district. Consolidated pricing is inconsistent with traditional cost of service principles and ignores the concept of cost-causation. In essence, consolidated pricing results in price subsidies to customers in a high-cost district at great cost to customers in a low-cost district. For example, the cost to install water pipe in a district with rocky soil is higher than the cost to install water pipe in a district without rocky soil. Under consolidated pricing, the customers in the lower-cost district with non-rocky soil would subsidize a portion of the cost to install pipe in the higher-cost district with rocky soil.

Moreover, the unjust cross-subsidies created by consolidated pricing could erode the efficiency of the water system. These rate subsidies would erode the economic incentive for customers in high-cost districts to be more efficient in placing demands on the water utility because the prices they pay do not accurately reflect the cost of receiving water service. Hence, customers with subsidized prices may impose greater and less efficient demand on a high-cost district, which could cause greater cost at the high-cost district and increase customer subsidies required to bring that district's price down to the consolidated rate. To better reflect cost-causation, it is appropriate for the Company's rates in each district to be compensatory and free of subsidies.

Q PLEASE EXPLAIN HOW CONSOLIDATED PRICING CAN ERODE SYSTEM EFFICIENCY.

A Consolidated pricing could provide management teams in high cost districts disincentives for cost control, because those costs would be comingled with other, lower cost districts across the state. This would reduce the incentive to manage water costs. As indicated, the Commission recognized this possibility in its decision in the last case when it said, "[f]ull consolidation would increase the potential for imprudent spending by MAWC, since the impact of increases will be shared by more customers."

Q DO YOU HAVE ANY OTHER CONCERNS WITH CTP?

A Yes. CTP reduces the Company's incentive to perform due diligence before acquiring new water systems. The impact of acquiring a new system will be significantly reduced because all operation and maintenance costs will be consolidated into one tariff price. This may result in MAWC acquiring a system that disguises the impact of the acquisition on all customers. New systems could be acquired without adequate consideration as to whether the costs to operate those systems are economical since those costs would be rolled into existing rates under consolidated pricing. Besides, the Commission already recognized in its last decision that the establishment of two districts provides sufficient incentive for the Company to acquire "small struggling systems."

Q HAS THE COMPANY ACQUIRED SMALL WATER SYSTEMS?

A Yes. MAWC has acquired many water systems over the years. Many of these acquisitions were made prior to rates being consolidated down to two districts. Clearly,

the creation of a consolidated state-wide rate was not needed for MAWC to acquire other small systems.

Q PLEASE STATE YOUR RECOMMENDATION WITH RESPECT TO CTP.

A I recommend that the Commission reject MAWC's proposal for CTP, and instead maintain the two pricing districts approved by the Commission in the last rate case. I recommend that the respective revenue requirement for St. Louis County customers and Non-St. Louis County customers be recovered through proposed rates based on each district's respective cost of service.

Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A Yes, it does.

Qualifications of Jessica A. York

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Jessica York. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q PLEASE STATE YOUR OCCUPATION.

A I am a consultant in the field of public utility regulation and an Associate with the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

Q PLEASE IDENTIFY THE JURISDICTIONS IN WHICH YOU HAVE PREVIOUSLY SPONSORED TESTIMONY.

A I have sponsored expert testimony in front of the Illinois Commerce Commission, the Indiana Utility Regulatory Commission, the Michigan Public Service Commission, the Minnesota Public Utilities Commission, the Missouri Public Service Commission, the Public Utilities Commission of Nevada, and the Oklahoma Corporation Commission.

Q PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EMPLOYMENT EXPERIENCE.

A I graduated from Truman State University in 2008 where I received my Bachelor of Science Degree in Mathematics with minors in Statistics and Actuarial Science. I earned my Master of Business Administration Degree with a concentration in Finance from the University of Missouri-St. Louis in 2014.

I joined BAI in 2011 as an analyst. Then, in March 2015, I joined the consulting team of BAI.

I have worked in various electric, natural gas and water and wastewater regulatory proceedings addressing cost of capital, sales revenue forecasts, revenue requirement assessments, class cost of service studies, rate design, and various policy issues. I have also conducted competitive power and natural gas solicitations on behalf of large electric and natural gas users, have assisted those large power and natural gas users in developing procurement plans and strategies, assisted in competitive contract negotiations, and power and natural gas contract supply administration. In the regulated arena, I have evaluated cost of service studies and rate designs proffered by other parties in cases for various utilities, including in Wisconsin, Illinois, Indiana, Kansas, and others. I have conducted bill audits, rate forecasts and tariff rate optimization studies.

I have also provided support to clients with facilities in deregulated markets, including drafting supply requests for proposals, evaluating supply bids, and auditing competitive supply bills. I have also prepared and presented to clients reports that monitor the electric market and recommend strategic hedging transactions.

BAI was formed in April 1995. BAI and its predecessor firm have participated in more than 700 regulatory proceedings in forty states and Canada.

BAI provides consulting services in the economic, technical, accounting, and financial aspects of public utility rates and in the acquisition of utility and energy services through RFPs and negotiations, in both regulated and unregulated markets. Our clients include large industrial and institutional customers, some utilities and, on occasion, state regulatory agencies. We also prepare special studies and reports, forecasts, surveys and siting studies, and present seminars on utility-related issues.

In general, we are engaged in energy and regulatory consulting, economic analysis and contract negotiation.

In addition to our main office in St. Louis, the firm also has branch offices in Corpus Christi, Texas; Detroit, Michigan; Louisville, Kentucky and Phoenix, Arizona.

453006

Missouri-American Water Company
Class Cost of Service Study - Functional Allocators to Customer Class
Case No: WR-2022-0303, SR-2022-0304

	Functional COS	Alloc	Description	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total	Variance
Source of Supply Expense												
Fixed	$ 5,121,572	2	Base/Extra Daily	$ 3,269,948	$ 1,143,888	$ 330,080	$ 147,935	$ 225,802	$ -	$ 3,919	$ 5,121,572	$ -
Variable	$ 4,608,894	1	Total Usage	$ 3,095,249	$ 940,976	$ 66,512	$ 45,748	$ 46,920	$ 319,707	$ 93,782	$ 4,608,894	$ -
Power and Pumping Expenses												
Fixed	$ 17,454,964	3	Base/Extra Daily	$ 10,528,848	$ 3,684,227	$ 1,060,623	$ 474,986	$ 725,085	$ 760,500	$ 220,696	$ 17,454,964	$ -
Variable	$ 3,008,720	1	Total Usage	$ 2,043,525	$ 615,629	$ 18,460	$ 18,462	$ 11,825	$ 232,965	$ 67,856	$ 3,008,720	$ -
Water Treatment												
Fixed	$ 47,947,178	2	Base/Extra Daily	$ 30,612,630	$ 10,708,859	$ 3,090,148	$ 1,384,939	$ 2,113,916	$ -	$ 36,687	$ 47,947,178	$ -
Variable	$ 12,817,674	1	Total Usage	$ 7,802,245	$ 2,569,380	$ 1,062,425	$ 528,091	$ 791,575	$ 36,371	$ 27,587	$ 12,817,674	$ -
Transmission	$ 22,224,730	3	Base/Extra Daily w/ Fire	$ 13,405,974	$ 4,690,984	$ 1,350,451	$ 604,781	$ 923,223	$ 968,315	$ 281,003	$ 22,224,730	$ -
Distribution	$ 134,523,698	4	Base/Extra Hourly w/ Fire	$ 92,436,930	$ 27,434,788	$ 57,456	$ 529,179	$ -	$ 10,892,137	$ 3,173,207	$ 134,523,698	$ -
Storage	$ 1,098,851	5	Storage	$ 693,637	$ 203,321	$ 35,430	$ 15,882	$ 24,241	$ -	$ 126,340	$ 1,098,851	$ -
Meters	$ 32,679,721	8	Meters	$ 25,731,752	$ 6,730,298	$ 217,671	$ -	$ -	$ -	$ -	$ 32,679,721	$ -
Services	$ 21,503,995	9	Services	$ 17,117,851	$ 2,335,550	$ 26,176	$ -	$ -	$ -	$ 2,024,419	$ 21,503,995	$ -
Customers	$ 14,420,398	10	Customers	$ 13,364,296	$ 740,236	$ 5,595	$ 166	$ 83	$ -	$ 310,022	$ 14,420,398	$ -
Hydrants	$ 14,163,574	7	Hydrants	$ -	$ -	$ -	$ -	$ -	$ 14,147,016	$ 16,558	$ 14,163,574	$ -
Total	**$ 331,573,969**			**$ 220,102,884**	**$ 61,798,134**	**$ 7,321,028**	**$ 3,750,168**	**$ 4,862,669**	**$ 27,357,011**	**$ 6,382,075**	**$ 331,573,969**	$ -
				66.38%	18.64%	2.21%	1.13%	1.47%	8.25%	1.92%	100.00%	
Rate Year Water Revenue	$ 234,849,443			$ 167,224,457	$ 49,403,315	$ 6,252,876	$ 4,232,070	$ 3,977,486	$ -	$ 3,759,239	$ 234,849,443	$ -
Other Water Operating Revenues	$ 3,588,819											
Increase	$ 96,724,526			$ 52,878,427	$ 12,394,819	$ 1,068,152	$ (481,902)	$ 885,183	$ 27,357,011	$ 2,622,836	$ 96,724,526	$ (0)
Percent Increase	41.2%			31.62%	25.09%	17.08%	-11.39%	22.25%	0.00%	69.77%	41.19%	
Rate Year Revenue				$ 167,224,457	$ 49,403,315	$ 6,252,876	$ 4,232,070	$ 3,977,486	$ -	$ 3,759,239	$ 234,849,443	
Cost of Service Increase				$ 52,878,427	$ 12,394,819	$ 1,068,152	$ (481,902)	$ 885,183	$ 27,357,011	$ 2,622,836	$ 96,724,526	
Allocation of Public Fire				$ 21,540,692	$ 5,634,101	$ 182,218			$ (27,357,011)		$ -	
Revenue Target				$ 241,643,576	$ 67,432,235	$ 7,503,246	$ 3,750,168	$ 4,862,669	$ -	$ 6,382,075	$ 331,573,969	
Percent Increase				44.5%	36.5%	20.0%	-11.4%	22.3%	0.0%	69.8%	41.2%	
				1.08	0.89	0.49	(0.28)	0.54	-	1.69	1.00	
Including Increase	$ 335,162,787											
Workpaper	335,162,790											
	$ (3)											
Variable Cost	$ 20,435,288											
			As Filed Increase to Reach COS									
			Amount	$ 68,650,658	$ 17,498,662	$ 5,514,402	$ 515,600	$ 2,643,997	$ -	$ 1,901,207	$ 96,724,526	
			Percent	41.1%	35.4%	88.2%	12.2%	66.5%		50.6%	41.2%	
			Index	1.00	0.86	2.14	0.30	1.61		1.23	1.00	
				$ 74,419,119	$ 18,028,920	$ 1,250,370	$ (481,902)	$ 885,183	$ -	$ 2,622,836	$ 96,724,526	
				$ 5,768,462	$ 530,258	$ (4,264,033)	$ (997,502)	$ (1,758,814)	$ -	$ 721,629		

MAWC Class Cost of Service Study
Case Nos. WR-2022-0303 | SR-2022-0304

Schedule JAY-1

Enter 1 to Modify Purchased Power Allocation

1

	Allocator	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total	Check	
Source of Supply											
Purch Water	1	$ 290,835	$ 96,124	$ 41,179	$ 20,412	$ 30,693	$ -	$ 660	$ 479,903	$ 479,903	
Fuel & Power	6	$ 2,804,414	$ 844,853	$ 25,333	$ 25,336	$ 16,227	$ 319,707	$ 93,121	$ 4,128,991	$ 4,128,991	
Total		$ 3,095,249	$ 940,976	$ 66,512	$ 45,748	$ 46,920	$ 319,707	$ 93,782	$ 4,608,894	$ 4,608,894	$ -
Power & Pumping											
Fuel & Power	6	$ 2,043,525	$ 615,629	$ 18,460	$ 18,462	$ 11,825	$ 232,965	$ 67,856	$ 3,008,720	$ 3,008,720	$ -
Water Treatment											
Fuel & Power	6	$ 319,040	$ 96,113	$ 2,882	$ 2,882	$ 1,846	$ 36,371	$ 10,594	$ 469,728	$ 469,728	
Chemicals	1	$ 7,479,646	$ 2,472,090	$ 1,059,039	$ 524,959	$ 789,353	$ -	$ 16,985	$ 12,342,072	$ 12,342,072	
Waste Disposal	1	$ 3,560	$ 1,177	$ 504	$ 250	$ 376	$ -	$ 8	$ 5,874	$ 5,874	
Total		$ 7,802,245	$ 2,569,380	$ 1,062,425	$ 528,091	$ 791,575	$ 36,371	$ 27,587	$ 12,817,674	$ 12,817,674	$ -

Missouri-American Water Company
Class Cost of Service Study - Account Detail
Case No: WR-2022-0303, SR-2022-0304

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Source of Supply Expense															
Operating Expense															
Purchased Water	$ 479,903	A	Source of Supply	$ 479,903	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 479,903	$ -
Fuel and Power	$ 4,128,991	A	Source of Supply	$ 4,128,991	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,128,991	$ -
Salaries and Wages	$ 27,691	A	Source of Supply	$ 27,691	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 27,691	$ -
Contract Services - Other	$ 124,230	A	Source of Supply	$ 124,230	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 124,230	$ -
Building Maintenance and Services	$ 382,028	A	Source of Supply	$ 382,028	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 382,028	$ -
Miscellaneous	$ 1,166	A	Source of Supply	$ 1,166	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,166	$ -
Telelcommunications	$ 125,722	A	Source of Supply	$ 125,722	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 125,722	$ -
Postage	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Office supplies and services	$ 3,566	A	Source of Supply	$ 3,566	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,566	$ -
Materials & Supplies	$ 4,113	A	Source of Supply	$ 4,113	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,113	$ -
Rents-Property	$ 397	A	Source of Supply	$ 397	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 397	$ -
Rents-Equipment	$ 4,647	A	Source of Supply	$ 4,647	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,647	$ -
Transportation	$ 10,066	A	Source of Supply	$ 10,066	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,066	$ -
	$ 5,292,520			$ 5,292,520	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,292,520	$ -
Maintenance Expense															
Salaries and Wages	$ 257,487	A	Source of Supply	$ 257,487	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 257,487	$ -
Materials & Supplies	$ 37,093	A	Source of Supply	$ 37,093	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 37,093	$ -
Transportation	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Miscellaneous	$ 8,812	A	Source of Supply	$ 8,812	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,812	$ -
Contract Services - Eng	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Contract Services - Other	$ 81,823	A	Source of Supply	$ 81,823	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 81,823	$ -
	$ 385,215			$ 385,215	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 385,215	$ -
Total SS Expense	**$ 5,677,735**			**$ 5,677,735**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 5,677,735**	**$ -**
Power and Pumping Expenses															
Operating Expense															
Fuel and Power	$ 3,008,720	B	Pumping	$ -	$ 3,008,720	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,008,720	$ -
Salaries and Wages	$ 1,336,409	B	Pumping	$ -	$ 1,336,409	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,336,409	$ -
Employee Benefits	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Building Maintenance and Services	$ 4,917	B	Pumping	$ -	$ 4,917	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,917	$ -
Miscellaneous	$ 982	B	Pumping	$ -	$ 982	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 982	$ -
Office supplies and services	$ 53	B	Pumping	$ -	$ 53	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 53	$ -
Materials & Supplies	$ 2,821	B	Pumping	$ -	$ 2,821	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,821	$ -
Rents-Equipment	$ 2,198	B	Pumping	$ -	$ 2,198	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,198	$ -
Transportation	$ 329,008	B	Pumping	$ -	$ 329,008	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 329,008	$ -
	$ 4,685,108			$ -	$ 4,685,108	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,685,108	$ -
Maintenance Expense															
Salaries and Wages	$ 354,333	B	Pumping	$ -	$ 354,333	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 354,333	$ -
Transportation	$ 561	B	Pumping	$ -	$ 561	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 561	$ -
Contract Services - Eng	$ 1,659	B	Pumping	$ -	$ 1,659	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,659	$ -
Contract Services - Other	$ 78,395	B	Pumping	$ -	$ 78,395	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 78,395	$ -
Miscellaneous	$ 2,344	B	Pumping	$ -	$ 2,344	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,344	$ -
Materials & Supplies	$ 57,913	B	Pumping	$ -	$ 57,913	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 57,913	$ -
	$ 495,205			$ -	$ 495,205	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 495,205	$ -
Total Pumping Expense	**$ 5,180,313**			**$ -**	**$ 5,180,313**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 5,180,313**	**$ -**
Water Treatment															
Operating Expense															
Fuel and Power	$ 469,728	C	Water Treatment	$ -	$ -	$ 469,728	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 469,728	$ -
Chemicals	$ 12,342,072	C	Water Treatment	$ -	$ -	$ 12,342,072	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,342,072	$ -
Waste Disposal	$ 5,874	C	Water Treatment	$ -	$ -	$ 5,874	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,874	$ -
Salaries and Wages	$ 3,071,322	C	Water Treatment	$ -	$ -	$ 3,071,322	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,071,322	$ -
Employee Benefits	$ 10	C	Water Treatment	$ -	$ -	$ 10	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10	$ -
Contract Services - Eng	$ 13,355	C	Water Treatment	$ -	$ -	$ 13,355	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,355	$ -
Contract Services - Other	$ 63,055	C	Water Treatment	$ -	$ -	$ 63,055	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 63,055	$ -
Building Maintenance and Services	$ 68,281	C	Water Treatment	$ -	$ -	$ 68,281	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 68,281	$ -
Miscellaneous	$ 86,564	C	Water Treatment	$ -	$ -	$ 86,564	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 86,564	$ -
Telelcommunications	$ 10,462	C	Water Treatment	$ -	$ -	$ 10,462	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,462	$ -
Postage	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Office supplies and services	$ 13,599	C	Water Treatment	$ -	$ -	$ 13,599	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,599	$ -
Materials & Supplies	$ 20,354	C	Water Treatment	$ -	$ -	$ 20,354	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,354	$ -
Rents-Property	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Rents-Equipment	$ 5,346	C	Water Treatment	$ -	$ -	$ 5,346	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,346	$ -
Transportation	$ 1,900	C	Water Treatment	$ -	$ -	$ 1,900	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,900	$ -
	$ 16,171,922			$ -	$ -	$ 16,171,922	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 16,171,922	$ -

Missouri-American Water Company
Class Cost of Service Study - Account Detail
Case No: WR-2022-0303, SR-2022-0304

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Maintenance Expense															
Salaries and Wages	$ 1,455,538	C	Water Treatment	$ -	$ -	$ 1,455,538	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,455,538	$ -
Transportation	$ 14,420	C	Water Treatment	$ -	$ -	$ 14,420	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 14,420	$ -
Contract Services - Eng	$ 3,537	C	Water Treatment	$ -	$ -	$ 3,537	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,537	$ -
Contract Services - Other	$ 990,534	C	Water Treatment	$ -	$ -	$ 990,534	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 990,534	$ -
Miscellaneous	$ 46,564	C	Water Treatment	$ -	$ -	$ 46,564	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 46,564	$ -
Materials & Supplies	$ 720,477	C	Water Treatment	$ -	$ -	$ 720,477	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 720,477	$ -
	$ 3,231,070			$ -	$ -	$ 3,231,070	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,231,070	$ -
Total Water Treatment Expense	**$ 19,402,992**			**$ -**	**$ -**	**$ 19,402,992**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 19,402,992**	**$ -**
Transmission & Distribution Expense															
Operating Expense															
Fuel and Power	$ 457,785	1	T/D Oper. Expense	$ -	$ -	$ -	$ 29,459	$ 281,921	$ -	$ 146,404	$ -	$ -	$ -	$ 457,785	$ -
Salaries and Wages	$ 4,616,413	1	T/D Oper. Expense	$ -	$ -	$ -	$ 297,075	$ 2,842,963	$ -	$ 1,476,375	$ -	$ -	$ -	$ 4,616,413	$ -
Employee Benefits	$ 10,863	1	T/D Oper. Expense	$ -	$ -	$ -	$ 699	$ 6,690	$ -	$ 3,474	$ -	$ -	$ -	$ 10,863	$ -
Contract Services - Eng	$ 37,650	1	T/D Oper. Expense	$ -	$ -	$ -	$ 2,423	$ 23,186	$ -	$ 12,041	$ -	$ -	$ -	$ 37,650	$ -
Contract Services - Other	$ 1,262,621	1	T/D Oper. Expense	$ -	$ -	$ -	$ 81,252	$ 777,570	$ -	$ 403,799	$ -	$ -	$ -	$ 1,262,621	$ -
Building Maintenance and Services	$ 133,413	1	T/D Oper. Expense	$ -	$ -	$ -	$ 8,585	$ 82,161	$ -	$ 42,667	$ -	$ -	$ -	$ 133,413	$ -
Miscellaneous	$ 44,632	1	T/D Oper. Expense	$ -	$ -	$ -	$ 2,872	$ 27,486	$ -	$ 14,274	$ -	$ -	$ -	$ 44,632	$ -
Telelcommunications	$ 71,262	1	T/D Oper. Expense	$ -	$ -	$ -	$ 4,586	$ 43,886	$ -	$ 22,790	$ -	$ -	$ -	$ 71,262	$ -
Postage	$ -	1	T/D Oper. Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Office supplies and services	$ 44,900	1	T/D Oper. Expense	$ -	$ -	$ -	$ 2,889	$ 27,651	$ -	$ 14,359	$ -	$ -	$ -	$ 44,900	$ -
Materials & Supplies	$ 55,062	1	T/D Oper. Expense	$ -	$ -	$ -	$ 3,543	$ 33,909	$ -	$ 17,609	$ -	$ -	$ -	$ 55,062	$ -
Rents-Property	$ 163	1	T/D Oper. Expense	$ -	$ -	$ -	$ 10	$ 100	$ -	$ 52	$ -	$ -	$ -	$ 163	$ -
Rents-Equipment	$ 4,144	1	T/D Oper. Expense	$ -	$ -	$ -	$ 267	$ 2,552	$ -	$ 1,325	$ -	$ -	$ -	$ 4,144	$ -
Transportation	$ 196,349	1	T/D Oper. Expense	$ -	$ -	$ -	$ 12,635	$ 120,919	$ -	$ 62,794	$ -	$ -	$ -	$ 196,349	$ -
	$ 6,935,257			$ -	$ -	$ -	$ 446,297	$ 4,270,995	$ -	$ 2,217,965	$ -	$ -	$ -	$ 6,935,257	$ -
Maintenance Expense															
Salaries and Wages	$ 1,741,996	2	T/D Maint.. Expense	$ -	$ -	$ -	$ 43,040	$ 411,887	$ -	$ 239,479	$ 582,930	$ -	$ 464,660	$ 1,741,996	$ -
Contract Services - Eng	$ 94,411	2	T/D Maint.. Expense	$ -	$ -	$ -	$ 2,333	$ 22,323	$ -	$ 12,979	$ 31,593	$ -	$ 25,183	$ 94,411	$ -
Contract Services - Other	$ 2,286,428	2	T/D Maint.. Expense	$ -	$ -	$ -	$ 56,492	$ 540,615	$ -	$ 314,325	$ 765,115	$ -	$ 609,881	$ 2,286,428	$ -
Transportation	$ 958,837	2	T/D Maint.. Expense	$ -	$ -	$ -	$ 23,690	$ 226,712	$ -	$ 131,815	$ 320,859	$ -	$ 255,760	$ 958,837	$ -
Miscellaneous	$ 1,117,388	2	T/D Maint.. Expense	$ -	$ -	$ -	$ 27,608	$ 264,201	$ -	$ 153,612	$ 373,915	$ -	$ 298,052	$ 1,117,388	$ -
Materials & Supplies	$ 1,017,496	2	T/D Maint.. Expense	$ -	$ -	$ -	$ 25,140	$ 240,582	$ -	$ 139,879	$ 340,488	$ -	$ 271,407	$ 1,017,496	$ -
	$ 7,216,556			$ -	$ -	$ -	$ 178,302	$ 1,706,321	$ -	$ 992,090	$ 2,414,901	$ -	$ 1,924,943	$ 7,216,556	$ -
Total T&D Expense	**$ 14,151,813**			**$ -**	**$ -**	**$ -**	**$ 624,599**	**$ 5,977,316**	**$ -**	**$ 3,210,054**	**$ 2,414,901**	**$ -**	**$ 1,924,943**	**$ 14,151,813**	**$ -**
General Mains Expense															
Operations															
Salaries and Wages	$ 1,072,388	K	Mains	$ -	$ -	$ -	$ 101,457	$ 970,931	$ -	$ -	$ -	$ -	$ -	$ 1,072,388	$ -
Miscellaneous	$ 1,011	K	Mains	$ -	$ -	$ -	$ 96	$ 915	$ -	$ -	$ -	$ -	$ -	$ 1,011	$ -
	$ 1,073,399			$ -	$ -	$ -	$ 101,553	$ 971,846	$ -	$ -	$ -	$ -	$ -	$ 1,073,399	$ -
Maintenance Expense															
Salaries and Wages	$ 244,551	K	Mains	$ -	$ -	$ -	$ 23,137	$ 221,414	$ -	$ -	$ -	$ -	$ -	$ 244,551	$ -
Miscellaneous	$ (1,168)	K	Mains	$ -	$ -	$ -	$ (111)	$ (1,057)	$ -	$ -	$ -	$ -	$ -	$ (1,168)	$ -
	$ 243,383			$ -	$ -	$ -	$ 23,026	$ 220,357	$ -	$ -	$ -	$ -	$ -	$ 243,383	$ -
General Mains Expense	**$ 1,316,782**			**$ -**	**$ -**	**$ -**	**$ 124,579**	**$ 1,192,203**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,316,782**	**$ -**
Storage Expense															
Operating Expense															
Salaries and Wages	$ -	F	Storage	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Miscellaneous	$ -	F	Storage	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ -			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Maintenance Expense															
Salaries and Wages	$ -	F	Storage	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Miscellaneous	$ -	F	Storage	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ -			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Storage Expense	**$ -**			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Meter Expense															
Operating Expense															
Salaries and Wages	$ 503,793	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 503,793	$ -	$ -	$ -	$ 503,793	$ -
Miscellaneous	$ 895	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 895	$ -	$ -	$ -	$ 895	$ -
	$ 504,688			$ -	$ -	$ -	$ -	$ -	$ -	$ 504,688	$ -	$ -	$ -	$ 504,688	$ -
Maintenance Expense															
Salaries and Wages	$ 125,052	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 125,052	$ -	$ -	$ -	$ 125,052	$ -
Miscellaneous	$ 3,068	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,068	$ -	$ -	$ -	$ 3,068	$ -
	$ 128,120			$ -	$ -	$ -	$ -	$ -	$ -	$ 128,120	$ -	$ -	$ -	$ 128,120	$ -

Missouri-American Water Company
Class Cost of Service Study - Account Detail
Case No: WR-2022-0303, SR-2022-0304

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Total Meter Expense	**$ 632,808**			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 632,808**	**$ -**	**$ -**	**$ -**	**$ 632,808**	**$ -**
Service Expense															
Operating Expense															
Salaries and Wages	$ -	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Miscellaneous	$ -	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ -			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Maintenance Expense															
Salaries and Wages	$ 306,472	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 306,472	$ -	$ -	$ 306,472	$ -
Miscellaneous	$ 5,392	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,392	$ -	$ -	$ 5,392	$ -
	$ 311,864			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 311,864	$ -	$ -	$ 311,864	$ -
Total Service Expense	**$ 311,864**			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 311,864**	**$ -**	**$ -**	**$ 311,864**	**$ -**
Hydrant Expense															
Maintenance Expense															
Salaries and Wages	$ 249,441	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 249,441	$ 249,441	$ -
Miscellaneous	$ (851)	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (851)	$ (851)	$ -
	$ 248,590			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 248,590	$ 248,590	$ -
Hydrant Expense	**$ 248,590**			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 248,590**	**$ 248,590**	**$ -**
Customer Accounts															
Fuel and Power	$ 1,626	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,626	$ -	$ 1,626	$ -
Salaries and Wages	$ 692,758	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 692,758	$ -	$ 692,758	$ -
Contract Services - Other	$ 129,439	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 129,439	$ -	$ 129,439	$ -
Building Maintenance and Services	$ 14,186	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 14,186	$ -	$ 14,186	$ -
Miscellaneous	$ -	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Telelcommunications	$ 13,448	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,448	$ -	$ 13,448	$ -
Office supplies and services	$ 3,770	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,770	$ -	$ 3,770	$ -
Materials & Supplies	$ 11,576	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 11,576	$ -	$ 11,576	$ -
Transportation	$ (32,254)	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (32,254)	$ -	$ (32,254)	$ -
Uncollectible Accounts	$ 3,379,756	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,379,756	$ -	$ 3,379,756	$ -
Customer accounting, other	$ 1,106,496	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,106,496	$ -	$ 1,106,496	$ -
	$ 5,320,801			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,320,801	$ -	$ 5,320,801	$ -
Total Customer Accounting Expense	**$ 5,320,801**			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 5,320,801**	**$ -**	**$ 5,320,801**	**$ -**
Administrative & General Expense															
Operating Expense															
Fuel and Power	$ 22,483	3	Fixed O&M	$ 755	$ 1,535	$ 4,655	$ 530	$ 5,068	$ -	$ 2,716	$ 1,927	$ 3,761	$ 1,536	$ 22,483	$ -
Salaries and Wages	$ 11,584,140	4	Labor	$ 205,756	$ 1,219,870	$ 3,266,127	$ 335,287	$ 3,208,649	$ -	$ 1,691,700	$ 641,703	$ 499,825	$ 515,223	$ 11,584,140	$ -
Employee Benefits	$ 3,700,854	4	Labor	$ 65,734	$ 389,719	$ 1,043,449	$ 107,116	$ 1,025,086	$ -	$ 540,457	$ 205,009	$ 159,682	$ 164,601	$ 3,700,854	$ -
Support Services Costs - Employee	$ 13,784,538	4	Labor	$ 244,839	$ 1,451,583	$ 3,886,526	$ 398,975	$ 3,818,129	$ -	$ 2,013,037	$ 763,594	$ 594,766	$ 613,090	$ 13,784,538	$ -
Support Services Costs - Admin	$ 13,417,304	3	Fixed O&M	$ 450,854	$ 916,013	$ 2,777,794	$ 316,015	$ 3,024,219	$ -	$ 1,620,982	$ 1,150,194	$ 2,244,400	$ 916,831	$ 13,417,304	$ -
Contract Services - Eng	$ 115,691	3	Fixed O&M	$ 3,888	$ 7,898	$ 23,952	$ 2,725	$ 26,076	$ -	$ 13,977	$ 9,918	$ 19,352	$ 7,905	$ 115,691	$ -
Contract Services - Other	$ 1,069,189	3	Fixed O&M	$ 35,927	$ 72,995	$ 221,355	$ 25,182	$ 240,992	$ -	$ 129,172	$ 91,656	$ 178,850	$ 73,060	$ 1,069,189	$ -
Building Maintenance and Services	$ 375,508	3	Fixed O&M	$ 12,618	$ 25,636	$ 77,742	$ 8,844	$ 84,638	$ -	$ 45,366	$ 32,190	$ 62,814	$ 25,659	$ 375,508	$ -
Miscellaneous	$ 1,397,829	3	Fixed O&M	$ 46,971	$ 95,431	$ 289,394	$ 32,923	$ 315,066	$ -	$ 168,876	$ 119,828	$ 233,824	$ 95,516	$ 1,397,829	$ -
Telelcommunications	$ 639,572	3	Fixed O&M	$ 21,491	$ 43,664	$ 132,411	$ 15,064	$ 144,158	$ -	$ 77,268	$ 54,827	$ 106,985	$ 43,703	$ 639,572	$ -
Postage	$ -	3	Fixed O&M	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Office supplies and services	$ 473,965	3	Fixed O&M	$ 15,926	$ 32,358	$ 98,125	$ 11,163	$ 106,830	$ -	$ 57,261	$ 40,630	$ 79,283	$ 32,387	$ 473,965	$ -
Materials & Supplies	$ 62,664	3	Fixed O&M	$ 2,106	$ 4,278	$ 12,973	$ 1,476	$ 14,124	$ -	$ 7,571	$ 5,372	$ 10,482	$ 4,282	$ 62,664	$ -
Communications	$ 12,067	3	Fixed O&M	$ 405	$ 824	$ 2,498	$ 284	$ 2,720	$ -	$ 1,458	$ 1,034	$ 2,019	$ 825	$ 12,067	$ -
Rents-Property	$ 96,349	3	Fixed O&M	$ 3,238	$ 6,578	$ 19,947	$ 2,269	$ 21,717	$ -	$ 11,640	$ 8,259	$ 16,117	$ 6,584	$ 96,349	$ -
Rents-Equipment	$ 12,359	3	Fixed O&M	$ 415	$ 844	$ 2,559	$ 291	$ 2,786	$ -	$ 1,493	$ 1,059	$ 2,067	$ 845	$ 12,359	$ -
Transportation	$ 1,750,896	3	Fixed O&M	$ 58,834	$ 119,535	$ 362,489	$ 41,239	$ 394,647	$ -	$ 211,531	$ 150,095	$ 292,884	$ 119,642	$ 1,750,896	$ -
Regulatory Expense	$ 233,194	3	Fixed O&M	$ 7,836	$ 15,920	$ 48,278	$ 5,492	$ 52,561	$ -	$ 28,173	$ 19,990	$ 39,008	$ 15,935	$ 233,194	$ -
Insurance	$ 5,131,596	3	Fixed O&M	$ 172,434	$ 350,339	$ 1,062,398	$ 120,864	$ 1,156,646	$ -	$ 619,962	$ 439,904	$ 858,396	$ 350,652	$ 5,131,596	$ -
	$ 53,880,198			$ 1,350,028	$ 4,755,021	$ 13,332,672	$ 1,425,740	$ 13,644,113	$ -	$ 7,242,639	$ 3,737,192	$ 5,404,515	$ 2,988,277	$ 53,880,198	$ -
Maintenance Expense															
Salaries and Wages	$ 68,914	4	Labor	$ 1,224	$ 7,257	$ 19,430	$ 1,995	$ 19,088	$ -	$ 10,064	$ 3,817	$ 2,973	$ 3,065	$ 68,914	$ -
Transportation	$ 11,799	3	Fixed O&M	$ 396	$ 806	$ 2,443	$ 278	$ 2,659	$ -	$ 1,425	$ 1,011	$ 1,974	$ 806	$ 11,799	$ -
Contract Services - Eng	$ -	3	Fixed O&M	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Contract Services - Other	$ 58,683	3	Fixed O&M	$ 1,972	$ 4,006	$ 12,149	$ 1,382	$ 13,227	$ -	$ 7,090	$ 5,031	$ 9,816	$ 4,010	$ 58,683	$ -
Miscellaneous	$ 318,530	3	Fixed O&M	$ 10,703	$ 21,746	$ 65,945	$ 7,502	$ 71,796	$ -	$ 38,482	$ 27,306	$ 53,283	$ 21,766	$ 318,530	$ -
Materials & Supplies	$ 21,436	3	Fixed O&M	$ 720	$ 1,463	$ 4,438	$ 505	$ 4,832	$ -	$ 2,590	$ 1,838	$ 3,586	$ 1,465	$ 21,436	$ -
	$ 479,362			$ 15,016	$ 35,279	$ 104,406	$ 11,662	$ 111,602	$ -	$ 59,651	$ 39,003	$ 71,632	$ 31,112	$ 479,362	$ -
Total A&G Expense	**$ 54,359,560**			**$ 1,365,044**	**$ 4,790,300**	**$ 13,437,078**	**$ 1,437,402**	**$ 13,755,715**	**$ -**	**$ 7,302,290**	**$ 3,776,195**	**$ 5,476,147**	**$ 3,019,389**	**$ 54,359,560**	**$ -**
Total Operations & Maintenace Exp. (STL Water)	**$ 106,603,258**			**$ 7,042,779**	**$ 9,970,613**	**$ 32,840,070**	**$ 2,186,580**	**$ 20,925,234**	**$ -**	**$ 11,145,153**	**$ 6,502,960**	**$ 10,796,948**	**$ 5,192,921**	**$ 106,603,258**	**$ -**

Missouri-American Water Company
Class Cost of Service Study - Account Detail
Case No: WR-2022-0303, SR-2022-0304

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Taxes Other Than Income Tax															
Property Taxes	$ 28,327,198	5	Net Plant (less gen. a	$ 276,320	$ 1,037,096	$ 2,888,931	$ 2,695,074	$ 16,255,960	$ 115,604	$ 2,378,516	$ 1,351,865	$ 290,421	$ 1,037,410	$ 28,327,198	$ -
Payroll Taxes	$ 2,102,386	4	Labor	$ 37,342	$ 221,392	$ 592,764	$ 60,851	$ 582,332	$ -	$ 307,024	$ 116,462	$ 90,712	$ 93,507	$ 2,102,386	$ -
Utility Reg Assessment	$ 1,673,964	6	Rate Base	$ 18,700	$ 69,888	$ 194,769	$ 162,707	$ 900,058	$ 7,965	$ 155,668	$ 79,898	$ 18,898	$ 65,412	$ 1,673,964	$ -
Other Taxes	$ (93,694)	6	Rate Base	$ (1,047)	$ (3,912)	$ (10,901)	$ (9,107)	$ (50,377)	$ (446)	$ (8,713)	$ (4,472)	$ (1,058)	$ (3,661)	$ (93,694)	$ -
	$ 32,009,854			$ 331,315	$ 1,324,465	$ 3,665,562	$ 2,909,524	$ 17,687,974	$ 123,124	$ 2,832,495	$ 1,543,753	$ 398,974	$ 1,192,668	$ 32,009,854	$ -
Total Taxes Other Than Income Taxes (STL Water)	**$ 32,009,854**			**$ 331,315**	**$ 1,324,465**	**$ 3,665,562**	**$ 2,909,524**	**$ 17,687,974**	**$ 123,124**	**$ 2,832,495**	**$ 1,543,753**	**$ 398,974**	**$ 1,192,668**	**$ 32,009,854**	**$ -**
Plant Depreciation															
Intangible Plant															
Organization	$ -	5	Net Plant (less gen. a	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Franchises	$ -	5	Net Plant (less gen. a	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other P/E-Intangible	$ -	5	Net Plant (less gen. a	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Source of Supply															
Land & Land Rights	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Structures & Improvements	$ 331,346	A	Source of Supply	$ 331,346	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 331,346	$ -
Collection & Impound Reservoirs	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Lake, River, & Other Intakes	$ 12,498	A	Source of Supply	$ 12,498	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,498	$ -
Wells & Springs	$ 10,018	A	Source of Supply	$ 10,018	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,018	$ -
Infiltration Galleries & Tunnels	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Supply Mains	$ 87,813	A	Source of Supply	$ 87,813	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 87,813	$ -
Other P/E-Supply	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Pumping															
Pumping Land & Land Rights	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Pumping Structures & Improvements	$ 872,371	B	Pumping	$ -	$ 872,371	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 872,371	$ -
Boiler Plant Equipment	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Power Generation Equipment	$ 390,913	B	Pumping	$ -	$ 390,913	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 390,913	$ -
Steam Pumping Equipment	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Electric Pumping Equipment	$ 1,106,403	B	Pumping	$ -	$ 1,106,403	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,106,403	$ -
Diesel Pumping Equipment	$ 37,191	B	Pumping	$ -	$ 37,191	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 37,191	$ -
Pump Equip Hydraulic	$ 4,935	B	Pumping	$ -	$ 4,935	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,935	$ -
Other Pumping Equipment	$ 155,209	B	Pumping	$ -	$ 155,209	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 155,209	$ -
Water Treatment															
Water Treatment Land & land Rights	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Treatment Structures & Improvements	$ 2,678,396	C	Water Treatment	$ -	$ -	$ 2,678,396	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,678,396	$ -
Water Treatment Equipment	$ 2,978,553	C	Water Treatment	$ -	$ -	$ 2,978,553	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,978,553	$ -
Water Treatment - Other	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
T&D															
Transmission & Distribution Land	$ -	K	Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Transmission & Distribution Structures & Impr	$ 87,933	K	Mains	$ -	$ -	$ -	$ 8,319	$ 79,613	$ -	$ -	$ -	$ -	$ -	$ 87,933	$ -
TD Mains 4in & Less	$ 438,685	E	Distribution	$ -	$ -	$ -	$ -	$ 438,685	$ -	$ -	$ -	$ -	$ -	$ 438,685	$ -
TD Mains 6in to 8in	$ 14,992,808	E	Distribution	$ -	$ -	$ -	$ -	$ 14,992,808	$ -	$ -	$ -	$ -	$ -	$ 14,992,808	$ -
TD Mains 10in to 16in	$ 4,707,531	D	Transmission	$ -	$ -	$ -	$ -	$ 4,707,531	$ -	$ -	$ -	$ -	$ -	$ 4,707,531	$ -
TD Mains 18in & Grtr	$ 3,374,502	D	Transmission	$ -	$ -	$ -	$ 3,374,502	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,374,502	$ -
Other Transmission & Distribution Plant	$ -	K	Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Storage															
Distribution Reservoirs & Standpipes	$ 298,582	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 298,582	$ -	$ -	$ -	$ -	$ 298,582	$ -
Distribution Reservoirs & Standpipes - Tank Coating	$ -	F	Storage	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Meters															
Meters	$ 3,899,348	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,899,348	$ -	$ -	$ -	$ 3,899,348	$ -
Meter Installation	$ 543,000	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 543,000	$ -	$ -	$ -	$ 543,000	$ -
Meter Vaults	$ -	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Services															
Services	$ 2,639,691	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,639,691	$ -	$ -	$ 2,639,691	$ -
Hydrants															
Hydrants	$ 1,653,509	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,653,509	$ 1,653,509	$ -
Fire Mains	$ -	J	Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Enter 1 to classify the 10- to 16-inch main costs as distribution.

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Missouri-American Water Company
Class Cost of Service Study - Account Detail
Case No: WR-2022-0303, SR-2022-0304

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
General Plant															
General Land & Land Rights	$ -	3	Fixed O&M	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Stores Shops Equipment Structures	$ 543,416	3	Fixed O&M	$ 18,260	$ 37,100	$ 112,504	$ 12,799	$ 122,484	$ -	$ 65,652	$ 46,584	$ 90,901	$ 37,133	$ 543,416	$ -
Office Structures	$ 164,652	3	Fixed O&M	$ 5,533	$ 11,241	$ 34,088	$ 3,878	$ 37,112	$ -	$ 19,892	$ 14,115	$ 27,542	$ 11,251	$ 164,652	$ -
General Structures - HVAC	$ 51,519	3	Fixed O&M	$ 1,731	$ 3,517	$ 10,666	$ 1,213	$ 11,612	$ -	$ 6,224	$ 4,416	$ 8,618	$ 3,520	$ 51,519	$ -
Miscellaneous Structures	$ 53,468	3	Fixed O&M	$ 1,797	$ 3,650	$ 11,069	$ 1,259	$ 12,051	$ -	$ 6,460	$ 4,584	$ 8,944	$ 3,654	$ 53,468	$ -
Structures & Improvements - Leasehold	$ 1,151	3	Fixed O&M	$ 39	$ 79	$ 238	$ 27	$ 260	$ -	$ 139	$ 99	$ 193	$ 79	$ 1,151	$ -
Office Furniture and Equipment	$ 52,540	3	Fixed O&M	$ 1,765	$ 3,587	$ 10,877	$ 1,237	$ 11,842	$ -	$ 6,347	$ 4,504	$ 8,789	$ 3,590	$ 52,540	$ -
Computers & Peripheral Equipment	$ 1,055,026	3	Fixed O&M	$ 35,451	$ 72,028	$ 218,423	$ 24,849	$ 237,800	$ -	$ 127,461	$ 90,442	$ 176,481	$ 72,092	$ 1,055,026	$ -
Computer Hardware & Software	$ 1,053,708	3	Fixed O&M	$ 35,407	$ 71,938	$ 218,150	$ 24,818	$ 237,503	$ -	$ 127,301	$ 90,329	$ 176,261	$ 72,002	$ 1,053,708	$ -
Computer Software	$ 2,414,868	3	Fixed O&M	$ 81,146	$ 164,866	$ 499,952	$ 56,877	$ 544,304	$ -	$ 291,747	$ 207,014	$ 403,951	$ 165,013	$ 2,414,868	$ -
Personal Computer Software	$ -	3	Fixed O&M	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Office Equipment	$ 42,566	3	Fixed O&M	$ 1,430	$ 2,906	$ 8,813	$ 1,003	$ 9,594	$ -	$ 5,143	$ 3,649	$ 7,120	$ 2,909	$ 42,566	$ -
BTS Initial Investment	$ 1,616,600	3	Fixed O&M	$ 54,322	$ 110,367	$ 334,686	$ 38,075	$ 364,377	$ -	$ 195,306	$ 138,582	$ 270,419	$ 110,465	$ 1,616,600	$ -
Transportation Equipment - Light Trucks	$ 832,785	3	Fixed O&M	$ 27,984	$ 56,855	$ 172,412	$ 19,614	$ 187,707	$ -	$ 100,611	$ 71,390	$ 139,305	$ 56,906	$ 832,785	$ -
Transportation Equipment - Heavy Trucks	$ -	3	Fixed O&M	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Transportation Equipment - Cars	$ -	3	Fixed O&M	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Transportation Equipment - Other	$ 372,031	3	Fixed O&M	$ 12,501	$ 25,399	$ 77,022	$ 8,762	$ 83,855	$ -	$ 44,946	$ 31,892	$ 62,232	$ 25,422	$ 372,031	$ -
Stores Equipment	$ 23,553	3	Fixed O&M	$ 791	$ 1,608	$ 4,876	$ 555	$ 5,309	$ -	$ 2,846	$ 2,019	$ 3,940	$ 1,609	$ 23,553	$ -
Tools, Shop, & Garage Equipment	$ 342,229	3	Fixed O&M	$ 11,500	$ 23,364	$ 70,852	$ 8,060	$ 77,137	$ -	$ 41,346	$ 29,337	$ 57,247	$ 23,385	$ 342,229	$ -
Laboratory Equipment	$ 42,412	C	Water Treatment	$ -	$ -	$ 42,412	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 42,412	$ -
Power Operated Equipment	$ 31,031	3	Fixed O&M	$ 1,043	$ 2,119	$ 6,424	$ 731	$ 6,994	$ -	$ 3,749	$ 2,660	$ 5,191	$ 2,120	$ 31,031	$ -
Communication Equipment	$ -	3	Fixed O&M	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Communication Equipment (non telephone)	$ 362,427	3	Fixed O&M	$ 12,178	$ 24,743	$ 75,034	$ 8,536	$ 81,690	$ -	$ 43,786	$ 31,069	$ 60,626	$ 24,765	$ 362,427	$ -
Telephone Equipment	$ 8,071	3	Fixed O&M	$ 271	$ 551	$ 1,671	$ 190	$ 1,819	$ -	$ 975	$ 692	$ 1,350	$ 552	$ 8,071	$ -
Miscellaneous Equipment	$ 223,588	3	Fixed O&M	$ 7,513	$ 15,265	$ 46,290	$ 5,266	$ 50,396	$ -	$ 27,012	$ 19,167	$ 37,401	$ 15,278	$ 223,588	$ -
Other Tangible Property	$ 2,025	3	Fixed O&M	$ 68	$ 138	$ 419	$ 48	$ 456	$ -	$ 245	$ 174	$ 339	$ 138	$ 2,025	$ -
Plant Depreciation (STL Water)	$ 50,590,901			$ 752,405	$ 3,198,342	$ 7,613,826	$ 3,600,620	$ 22,302,941	$ 298,582	$ 5,559,535	$ 3,432,408	$ 1,546,849	$ 2,285,393	$ 50,590,901	$ -
CIAC-Non Taxable - Mains	$ (2,085,927)	K	Mains	$ -	$ -	$ -	$ (197,347)	$ (1,888,580)	$ -	$ -	$ -	$ -	$ -	$ (2,085,927)	$ -
CIAC-Non Taxable - Ext Dep	$ (712,213)	K	Mains	$ -	$ -	$ -	$ (67,382)	$ (644,831)	$ -	$ -	$ -	$ -	$ -	$ (712,213)	$ -
CIAC-Non Taxable - Services	$ (267)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (267)	$ -	$ -	$ (267)	$ -
CIAC-Non Taxable - Meters	$ (127,558)	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ (127,558)	$ -	$ -	$ -	$ (127,558)	$ -
CIAC-Non Taxable - Hydrants	$ (97,228)	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (97,228)	$ (97,228)	$ -
CIAC-Non Taxable - Other	$ (56,663)	K	Mains	$ -	$ -	$ -	$ (5,361)	$ (51,302)	$ -	$ -	$ -	$ -	$ -	$ (56,663)	$ -
CIAC-Non Taxable - WIP	$ (0)	K	Mains	$ -	$ -	$ -	$ (0)	$ (0)	$ -	$ -	$ -	$ -	$ -	$ (0)	$ -
CIAC-Taxable - Mains	$ (425,813)	K	Mains	$ -	$ -	$ -	$ (40,286)	$ (385,527)	$ -	$ -	$ -	$ -	$ -	$ (425,813)	$ -
CIAC-Taxable - Extension Deposits	$ (34,613)	K	Mains	$ -	$ -	$ -	$ (3,275)	$ (31,338)	$ -	$ -	$ -	$ -	$ -	$ (34,613)	$ -
CIAC-Taxable - Services	$ (356,312)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (356,312)	$ -	$ -	$ (356,312)	$ -
CIAC-Taxable - Meters	$ (14,672)	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ (14,672)	$ -	$ -	$ -	$ (14,672)	$ -
CIAC-Taxable - Hydrants	$ 47	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 47	$ 47	$ -
CIAC-Taxable - Other	$ (1,164)	K	Mains	$ -	$ -	$ -	$ (110)	$ (1,054)	$ -	$ -	$ -	$ -	$ -	$ (1,164)	$ -
CIAC-Taxable - WIP	$ (0)	K	Mains	$ -	$ -	$ -	$ (0)	$ (0)	$ -	$ -	$ -	$ -	$ -	$ (0)	$ -
CIAC-Taxable - Services SIT	$ -	K	Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Amortization of CIAC (STL Water)	$ (3,912,382)			$ -	$ -	$ -	$ (313,760)	$ (3,002,633)	$ -	$ (142,230)	$ (356,579)	$ -	$ (97,181)	$ (3,912,382)	$ -
Total Depreciation Expense (STL Water)	**$ 46,678,518**			**$ 752,405**	**$ 3,198,342**	**$ 7,613,826**	**$ 3,286,861**	**$ 19,300,308**	**$ 298,582**	**$ 5,417,305**	**$ 3,075,830**	**$ 1,546,849**	**$ 2,188,212**	**$ 46,678,518**	**$ -**
Eureka Depreciation	$ 425,107	3	Fixed O&M	$ 14,285	$ 29,022	$ 88,010	$ 10,012	$ 95,818	$ -	$ 51,358	$ 36,442	$ 71,110	$ 29,048	$ 425,107	$ -
Total Depreciation Expense	**$ 47,103,625**			**$ 766,689**	**$ 3,227,364**	**$ 7,701,836**	**$ 3,296,873**	**$ 19,396,126**	**$ 298,582**	**$ 5,468,663**	**$ 3,112,272**	**$ 1,617,959**	**$ 2,217,260**	**$ 47,103,625**	**$ -**
Amortization Expense															
Lead Service Replacement	$ 3,552,823	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,552,823	$ -	$ -	$ 3,552,823	$ -
Amortization - Reg Asset AFUDC	$ 1,135,922	6	Rate Base	$ 12,689	$ 47,425	$ 132,167	$ 110,410	$ 610,764	$ 5,405	$ 105,634	$ 54,218	$ 12,824	$ 44,388	$ 1,135,922	$ -
Amortization - Property Losses	$ 457,217	6	Rate Base	$ 5,108	$ 19,089	$ 53,198	$ 44,441	$ 245,837	$ 2,176	$ 42,518	$ 21,823	$ 5,162	$ 17,866	$ 457,217	$ -
Amortization - Reg Asset	$ -	6	Rate Base	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Hollister Pipeline	$ 6,801	6	Rate Base	$ 76	$ 284	$ 791	$ 661	$ 3,657	$ 32	$ 632	$ 325	$ 77	$ 266	$ 6,801	$ -
Low Income Costs	$ 7,596	6	Rate Base	$ 85	$ 317	$ 884	$ 738	$ 4,084	$ 36	$ 706	$ 363	$ 86	$ 297	$ 7,596	$ -
Total Amortization Expense (STL Water)	$ 5,160,359			$ 17,958	$ 67,115	$ 187,040	$ 156,250	$ 864,342	$ 7,649	$ 149,491	$ 3,629,550	$ 18,148	$ 62,817	$ 5,160,359	$ -
Total Amortization Expense	**$ 5,160,359**			**$ 17,958**	**$ 67,115**	**$ 187,040**	**$ 156,250**	**$ 864,342**	**$ 7,649**	**$ 149,491**	**$ 3,629,550**	**$ 18,148**	**$ 62,817**	**$ 5,160,359**	**$ -**

Missouri-American Water Company
Class Cost of Service Study - Account Detail
Case No: WR-2022-0303, SR-2022-0304

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Income Taxes															
Federal Income Tax	$ 7,016,645	6	Rate Base	$ 78,383	$ 292,947	$ 816,400	$ 682,006	$ 3,772,716	$ 33,388	$ 652,504	$ 334,904	$ 79,213	$ 274,184	$ 7,016,645	$ -
State Income Tax	$ 1,217,427	6	Rate Base	$ 13,600	$ 50,828	$ 141,650	$ 118,332	$ 654,587	$ 5,793	$ 113,213	$ 58,108	$ 13,744	$ 47,572	$ 1,217,427	
Deferred Income Taxes	$ 9,065,741	6	Rate Base	$ 101,273	$ 378,497	$ 1,054,816	$ 881,175	$ 4,874,476	$ 43,139	$ 843,057	$ 432,708	$ 102,346	$ 354,255	$ 9,065,741	
ITC Restored	$ (74,894)	6	Rate Base	$ (837)	$ (3,127)	$ (8,714)	$ (7,280)	$ (40,269)	$ (356)	$ (6,965)	$ (3,575)	$ (846)	$ (2,927)	$ (74,894)	$ -
Total Income Taxes (STL Water)	$ 17,224,919			$ 192,419	$ 719,144	$ 2,004,152	$ 1,674,234	$ 9,261,510	$ 81,964	$ 1,601,809	$ 822,145	$ 194,457	$ 673,085	$ 17,224,919	$ -
Total Income Tax Expense	**$ 17,224,919**			**$ 192,419**	**$ 719,144**	**$ 2,004,152**	**$ 1,674,234**	**$ 9,261,510**	**$ 81,964**	**$ 1,601,809**	**$ 822,145**	**$ 194,457**	**$ 673,085**	**$ 17,224,919**	
Required Net Operating Income (STL Water)	$ 127,060,772	6	Rate Base	$ 1,419,395	$ 5,304,817	$ 14,783,759	$ 12,350,097	$ 68,318,152	$ 604,609	$ 11,815,848	$ 6,064,609	$ 1,434,427	$ 4,965,060	$ 127,060,772	$ -
Required Net Operating Income	$ 127,060,772			$ 1,419,395	$ 5,304,817	$ 14,783,759	$ 12,350,097	$ 68,318,152	$ 604,609	$ 11,815,848	$ 6,064,609	$ 1,434,427	$ 4,965,060	$ 127,060,772	$ -
Total Revenue Requirement (STL Water)	**$ 335,162,787**			**$ 9,770,556**	**$ 20,613,518**	**$ 61,182,418**	**$ 22,573,557**	**$ 136,453,337**	**$ 1,115,928**	**$ 33,013,458**	**$ 21,675,289**	**$ 14,460,913**	**$ 14,303,811**	**$ 335,162,787**	$ -
Other Operating Revenue (STL Water)	$ (3,588,819)	6	Rate Base	$ (40,091)	$ (149,834)	$ (417,566)	$ (348,827)	$ (1,929,639)	$ (17,077)	$ (333,737)	$ (171,294)	$ (40,515)	$ (140,238)	$ (3,588,819)	$ -
Total Retail Revenue Requirement (STL Water)	**$ 331,573,969**			**$ 9,730,466**	**$ 20,463,684**	**$ 60,764,852**	**$ 22,224,730**	**$ 134,523,698**	**$ 1,098,851**	**$ 32,679,721**	**$ 21,503,995**	**$ 14,420,398**	**$ 14,163,574**	**$ 331,573,969**	$ -
Total Revenue Requirement (STL Water)	**$ 335,162,790**														
	check $ 3														

Missouri-American Water Company
Class Cost of Service Study - Account Detail
Case No: WR-2022-0303, SR-2022-0304

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Plant Account															
Intangible Plant															
Organization	$ 154,919	S	Net Plant (less gen. a	$ 1,511	$ 5,672	$ 15,799	$ 14,739	$ 88,903	$ 632	$ 13,008	$ 7,393	$ 1,588	$ 5,674	$ 154,919	$ -
Franchises	$ -	S	Net Plant (less gen. a	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other P/E-Intangible	$ 942,662	S	Net Plant (less gen. a	$ 9,195	$ 34,512	$ 96,137	$ 89,686	$ 540,960	$ 3,847	$ 79,151	$ 44,987	$ 9,665	$ 34,523	$ 942,662	$ -
Source of Supply															
Land & Land Rights	$ 1,507,036	A	Source of Supply	$ 1,507,036	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,507,036	$ -
Structures & Improvements	$ 13,666,910	A	Source of Supply	$ 13,666,910	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,666,910	$ -
Collection & Impound Reservoirs	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Lake, River, & Other Intakes	$ 266,443	A	Source of Supply	$ 266,443	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 266,443	$ -
Wells & Springs	$ 393,847	A	Source of Supply	$ 393,847	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 393,847	$ -
Infiltration Galleries & Tunnels	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Supply Mains	$ 1,556,863	A	Source of Supply	$ 1,556,863	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,556,863	$ -
Other P/E-Supply	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Pumping															
Pumping Land & Land Rights	$ 284,360	B	Pumping	$ -	$ 284,360	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 284,360	$ -
Pumping Structures & Improvements	$ 15,454,184	B	Pumping	$ -	$ 15,454,184	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,454,184	$ -
Boiler Plant Equipment	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Power Generation Equipment	$ 10,984,740	B	Pumping	$ -	$ 10,984,740	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,984,740	$ -
Steam Pumping Equipment	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Electric Pumping Equipment	$ 37,356,593	B	Pumping	$ -	$ 37,356,593	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 37,356,593	$ -
Diesel Pumping Equipment	$ 135,173	B	Pumping	$ -	$ 135,173	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 135,173	$ -
Pump Equip Hydraulic	$ 209,898	B	Pumping	$ -	$ 209,898	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 209,898	$ -
Other Pumping Equipment	$ 8,860,976	B	Pumping	$ -	$ 8,860,976	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,860,976	$ -
Water Treatment														$ -	$ -
Water Treatment Land & land Rights	$ 1,902,246	C	Water Treatment	$ -	$ -	$ 1,902,246	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,902,246	$ -
Water Treatment Structures & Improvements	$ 82,460,631	C	Water Treatment	$ -	$ -	$ 82,460,631	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 82,460,631	$ -
Water Treatment Equipment	$ 116,700,451	C	Water Treatment	$ -	$ -	$ 116,700,451	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 116,700,451	$ -
Water Treatment - Other	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
														$ -	$ -
T&D														$ -	$ -
Transmission & Distribution Land	$ 4,091,405	K	Mains	$ -	$ -	$ -	$ 387,083	$ 3,704,322	$ -	$ -	$ -	$ -	$ -	$ 4,091,405	$ -
Transmission & Distribution Structures & Impr	$ 1,639,748	K	Mains	$ -	$ -	$ -	$ 155,135	$ 1,484,614	$ -	$ -	$ -	$ -	$ -	$ 1,639,748	$ -
TD Mains 4in & Less	$ 27,458,101	E	Distribution	$ -	$ -	$ -	$ -	$ 27,458,101	$ -	$ -	$ -	$ -	$ -	$ 27,458,101	$ -
TD Mains 6in to 8in	$ 938,427,343	E	Distribution	$ -	$ -	$ -	$ -	$ 938,427,343	$ -	$ -	$ -	$ -	$ -	$ 938,427,343	$ -
TD Mains 10in to 16in	$ 294,652,995	D	Transmission	$ -	$ -	$ -	$ -	$ 294,652,995	$ -	$ -	$ -	$ -	$ -	$ 294,652,995	$ -
TD Mains 18in & Grtr	$ 211,216,271	D	Transmission	$ -	$ -	$ -	$ 211,216,271	$ -	$ -	$ -	$ -	$ -	$ -	$ 211,216,271	$ -
Other Transmission & Distribution Plant	$ -	K	Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
														$ -	$ -
Storage														$ -	$ -
Distribution Reservoirs & Standpipes	$ 9,223,269	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 9,223,269	$ -	$ -	$ -	$ -	$ 9,223,269	$ -
Distribution Reservoirs & Standpipes - Tank Coating	$ -	F	Storage	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Meters														$ -	$ -
Meters	$ 160,730,168	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 160,730,168	$ -	$ -	$ -	$ 160,730,168	$ -
Meter Installation	$ 12,300,266	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,300,266	$ -	$ -	$ -	$ 12,300,266	$ -
Meter Vaults	$ -	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
														$ -	$ -
Services														$ -	$ -
Services	$ 95,981,453	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 95,981,453	$ -	$ -	$ 95,981,453	$ -
														$ -	$ -
Hydrants														$ -	$ -
Hydrants	$ 73,302,495	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 73,302,495	$ 73,302,495	$ -
Fire Mains	$ -	J	Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
														$ -	$ -

Enter 1 to classify the 10- to 16-inch main costs as distribution.

1

MAWC Class Cost of Service Study
Case Nos. WR-2022-0303 | SR-2022-0304

Schedule JAY-1

Missouri-American Water Company
Class Cost of Service Study - Account Detail
Case No: WR-2022-0303, SR-2022-0304

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
General Plant															
General Land & Land Rights	$ 1,749	3	Fixed O&M	$ 59	$ 119	$ 362	$ 41	$ 394	$ -	$ 211	$ 150	$ 293	$ 120	$ 1,749	$ -
Stores Shops Equipment Structures	$ 17,150,508	3	Fixed O&M	$ 576,299	$ 1,170,883	$ 3,550,682	$ 403,943	$ 3,865,672	$ -	$ 2,072,000	$ 1,470,221	$ 2,868,878	$ 1,171,929	$ 17,150,508	$ -
Office Structures	$ 6,948,889	3	Fixed O&M	$ 233,500	$ 474,408	$ 1,438,633	$ 163,666	$ 1,566,258	$ -	$ 839,515	$ 595,691	$ 1,162,386	$ 474,832	$ 6,948,889	$ -
General Structures - HVAC	$ 1,280,856	3	Fixed O&M	$ 43,040	$ 87,445	$ 265,177	$ 30,168	$ 288,701	$ -	$ 154,744	$ 109,801	$ 214,257	$ 87,523	$ 1,280,856	$ -
Miscellaneous Structures	$ 568,109	3	Fixed O&M	$ 19,090	$ 38,785	$ 117,616	$ 13,381	$ 128,050	$ -	$ 68,635	$ 48,701	$ 95,031	$ 38,820	$ 568,109	$ -
Structures & Improvements - Leasehold	$ (139,053)	3	Fixed O&M	$ (4,673)	$ (9,493)	$ (28,788)	$ (3,275)	$ (31,342)	$ -	$ (16,799)	$ (11,920)	$ (23,260)	$ (9,502)	$ (139,053)	$ -
Office Furniture and Equipment	$ 1,032,745	3	Fixed O&M	$ 34,703	$ 70,507	$ 213,810	$ 24,324	$ 232,778	$ -	$ 124,769	$ 88,532	$ 172,754	$ 70,570	$ 1,032,745	$ -
Computers & Peripheral Equipment	$ 3,709,769	3	Fixed O&M	$ 124,657	$ 253,270	$ 768,036	$ 87,376	$ 836,171	$ -	$ 448,187	$ 318,019	$ 620,557	$ 253,496	$ 3,709,769	$ -
Computer Hardware & Software	$ 149,162	3	Fixed O&M	$ 5,012	$ 10,183	$ 30,881	$ 3,513	$ 33,621	$ -	$ 18,021	$ 12,787	$ 24,951	$ 10,193	$ 149,162	$ -
Computer Software	$ 37,629,653	3	Fixed O&M	$ 1,264,449	$ 2,569,015	$ 7,790,494	$ 886,285	$ 8,481,609	$ -	$ 4,546,143	$ 3,225,789	$ 6,294,559	$ 2,571,310	$ 37,629,653	$ -
Personal Computer Software	$ -	3	Fixed O&M	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Office Equipment	$ 461,170	3	Fixed O&M	$ 15,496	$ 31,485	$ 95,476	$ 10,862	$ 103,946	$ -	$ 55,715	$ 39,534	$ 77,143	$ 31,513	$ 461,170	$ -
BTS Initial Investment	$ 16,521,372	3	Fixed O&M	$ 555,159	$ 1,127,931	$ 3,420,431	$ 389,125	$ 3,723,867	$ -	$ 1,995,993	$ 1,416,289	$ 2,763,638	$ 1,128,938	$ 16,521,372	$ -
Transportation Equipment - Light Trucks	$ 12,157,338	3	Fixed O&M	$ 408,517	$ 829,994	$ 2,516,942	$ 286,340	$ 2,740,227	$ -	$ 1,468,762	$ 1,042,184	$ 2,033,638	$ 830,735	$ 12,157,338	$ -
Transportation Equipment - Heavy Trucks	$ 22,121,760	3	Fixed O&M	$ 743,346	$ 1,510,275	$ 4,579,884	$ 521,030	$ 4,986,177	$ -	$ 2,672,591	$ 1,896,380	$ 3,700,452	$ 1,511,624	$ 22,121,760	$ -
Transportation Equipment - Cars	$ 1,258,141	3	Fixed O&M	$ 42,277	$ 85,895	$ 260,474	$ 29,633	$ 283,581	$ -	$ 152,000	$ 107,854	$ 210,458	$ 85,971	$ 1,258,141	$ -
Transportation Equipment - Other	$ 3,405,386	3	Fixed O&M	$ 114,429	$ 232,489	$ 705,019	$ 80,206	$ 767,564	$ -	$ 411,414	$ 291,926	$ 569,641	$ 232,697	$ 3,405,386	$ -
Stores Equipment	$ 764,039	3	Fixed O&M	$ 25,674	$ 52,162	$ 158,180	$ 17,995	$ 172,212	$ -	$ 92,306	$ 65,497	$ 127,806	$ 52,208	$ 764,039	$ -
Tools, Shop, & Garage Equipment	$ 6,529,558	3	Fixed O&M	$ 219,409	$ 445,780	$ 1,351,819	$ 153,790	$ 1,471,742	$ -	$ 788,854	$ 559,744	$ 1,092,242	$ 446,178	$ 6,529,558	$ -
Laboratory Equipment	$ 746,821	C	Water Treatment	$ -	$ -	$ 746,821	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 746,821	$ -
Power Operated Equipment	$ 63,718	3	Fixed O&M	$ 2,141	$ 4,350	$ 13,192	$ 1,501	$ 14,362	$ -	$ 7,698	$ 5,462	$ 10,659	$ 4,354	$ 63,718	$ -
Communication Equipment	$ -	3	Fixed O&M	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Communication Equipment (non telephone)	$ 4,439,930	3	Fixed O&M	$ 149,193	$ 303,119	$ 919,202	$ 104,573	$ 1,000,747	$ -	$ 536,400	$ 380,611	$ 742,696	$ 303,389	$ 4,439,930	$ -
Telephone Equipment	$ 85,649	3	Fixed O&M	$ 2,878	$ 5,847	$ 17,732	$ 2,017	$ 19,305	$ -	$ 10,347	$ 7,342	$ 14,327	$ 5,853	$ 85,649	$ -
Miscellaneous Equipment	$ 2,300,043	3	Fixed O&M	$ 77,287	$ 157,026	$ 476,179	$ 54,173	$ 518,423	$ -	$ 277,875	$ 197,170	$ 384,743	$ 157,167	$ 2,300,043	$ -
Other Tangible Property	$ 76,662	3	Fixed O&M	$ 2,576	$ 5,234	$ 15,871	$ 1,806	$ 17,279	$ -	$ 9,262	$ 6,572	$ 12,824	$ 5,238	$ 76,662	$ -
Net Utility Plant	$ 2,261,125,417			$ 22,056,323	$ 82,782,816	$ 230,599,390	$ 215,125,384	$ 1,297,578,581	$ 9,227,748	$ 189,857,235	$ 107,908,169	$ 23,181,925	$ 82,807,846	$ 2,261,125,417	$ -
Additions to Rate Base															
Cash Working Capital(STL Water)	$ (3,358,744)	3	Fixed O&M	$ (112,862)	$ (229,305)	$ (695,363)	$ (79,108)	$ (757,051)	$ -	$ (405,779)	$ (287,927)	$ (561,839)	$ (229,510)	$ (3,358,744)	$ -
Materials and Supplies(STL Water)	$ 7,523,443	5	Net Plant (less gen. a	$ 73,388	$ 275,443	$ 767,273	$ 715,787	$ 4,317,433	$ 30,703	$ 631,712	$ 359,043	$ 77,133	$ 275,527	$ 7,523,443	$ -
Pension Asset(STL Water)	$ 11,703,053	5	Net Plant (less gen. a	$ 114,158	$ 428,464	$ 1,193,528	$ 1,113,438	$ 6,715,961	$ 47,761	$ 982,656	$ 558,507	$ 119,984	$ 428,594	$ 11,703,053	$ -
Regulatory Deferrals(STL Water)	$ 2,294,610	5	Net Plant (less gen. a	$ 22,383	$ 84,009	$ 234,014	$ 218,311	$ 1,316,794	$ 9,364	$ 192,669	$ 109,506	$ 23,525	$ 84,034	$ 2,294,610	$ -
Tank Painting Tracker(STL Water)	$ -	F	Storage	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Additions	$ 18,162,362			$ 97,067	$ 558,611	$ 1,499,453	$ 1,968,428	$ 11,593,138	$ 87,829	$ 1,401,258	$ 739,129	$ (341,197)	$ 558,645	$ 18,162,362	$ -
Reductions to Rate Base															
Customer Advances for Construction															
Advances for Construction - NT Mains	$ (24,796)	K	Mains	$ -	$ -	$ -	$ (2,346)	$ (22,450)	$ -	$ -	$ -	$ -	$ -	$ (24,796)	$ -
Advances for Construction - NT Extension Deposits	$ (1,030,964)	K	Mains	$ -	$ -	$ -	$ (97,538)	$ (933,426)	$ -	$ -	$ -	$ -	$ -	$ (1,030,964)	$ -
Advances for Construction - NT Hydrants	$ -	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Advances for Construction - NT WIP	$ -	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Advances for Construction - TAX Mains	$ -	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Advances for Construction - Reclassed to Current	$ -	K	Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Allocated MAWC Corporate - Customer Advances	$ 3,012	K	Mains	$ -	$ -	$ -	$ 285	$ 2,727	$ -	$ -	$ -	$ -	$ -	$ 3,012	$ -
CIAC															
CIAC-Non Taxable - Mains	$ (149,292,558)	K	Mains	$ -	$ -	$ -	$ (14,124,382)	$ (135,168,176)	$ -	$ -	$ -	$ -	$ -	$ (149,292,558)	$ -
CIAC-Non Taxable - Ext Dep	$ (51,238,345)	K	Mains	$ -	$ -	$ -	$ (4,847,596)	$ (46,390,749)	$ -	$ -	$ -	$ -	$ -	$ (51,238,345)	$ -
CIAC-Non Taxable - Services	$ (9,152)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (9,152)	$ -	$ -	$ (9,152)	$ -
CIAC-Non Taxable - Meters	$ (5,319,778)	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ (5,319,778)	$ -	$ -	$ -	$ (5,319,778)	$ -
CIAC-Non Taxable - Hydrants	$ (5,255,590)	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (5,255,590)	$ (5,255,590)	$ -
CIAC-Non Taxable - Other	$ (1,909,057)	K	Mains	$ -	$ -	$ -	$ (180,613)	$ (1,728,444)	$ -	$ -	$ -	$ -	$ -	$ (1,909,057)	$ -
CIAC-Non Taxable - WIP	$ -	K	Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CIAC-Taxable - Mains	$ (30,121,444)	K	Mains	$ -	$ -	$ -	$ (2,849,752)	$ (27,271,692)	$ -	$ -	$ -	$ -	$ -	$ (30,121,444)	$ -
CIAC-Taxable - Extension Deposits	$ (2,490,136)	K	Mains	$ -	$ -	$ -	$ (235,589)	$ (2,254,547)	$ -	$ -	$ -	$ -	$ -	$ (2,490,136)	$ -
CIAC-Taxable - Services	$ (12,202,449)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (12,202,449)	$ -	$ -	$ (12,202,449)	$ -
CIAC-Taxable - Meters	$ (611,339)	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ (611,339)	$ -	$ -	$ -	$ (611,339)	$ -
CIAC-Taxable - Hydrants	$ 2,563	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,563	$ 2,563	$ -
CIAC-Taxable - Other	$ (39,314)	K	Mains	$ -	$ -	$ -	$ (3,719)	$ (35,595)	$ -	$ -	$ -	$ -	$ -	$ (39,314)	$ -
CIAC-Taxable - WIP	$ -	K	Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CIAC-Taxable - Services SIT	$ -	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Accum Amort CIAC	$ 60,921,180	5	Net Plant (less gen. a	$ 594,260	$ 2,230,406	$ 6,213,007	$ 5,796,093	$ 34,960,475	$ 248,622	$ 5,115,296	$ 2,907,354	$ 624,587	$ 2,231,080	$ 60,921,180	$ -
Allocated MAWC Corporate - CIAC	$ (1,294,222)	K	Mains	$ -	$ -	$ -	$ (122,445)	$ (1,171,777)	$ -	$ -	$ -	$ -	$ -	$ (1,294,222)	$ -
Deferred Income Tax (STL Water)	$ (398,618,481)	5	Net Plant (less gen. a	$ (3,888,355)	$ (14,593,954)	$ (40,652,844)	$ (37,924,899)	$ (228,752,814)	$ (1,626,779)	$ (33,470,325)	$ (19,023,354)	$ (4,086,790)	$ (14,598,367)	$ (398,618,481)	$ -
Pension/OPEB Tracker (STL Water)	$ (12,680,198)	4	Labor	$ (225,224)	$ (1,335,290)	$ (3,575,159)	$ (367,011)	$ (3,512,242)	$ -	$ (1,851,763)	$ (702,419)	$ (547,117)	$ (563,972)	$ (12,680,198)	$ -
Total Reductions	$ (611,211,068)			$ (3,519,318)	$ (13,698,839)	$ (38,014,996)	$ (54,959,514)	$ (412,278,710)	$ (1,378,157)	$ (36,137,909)	$ (29,030,020)	$ (4,009,319)	$ (18,184,286)	$ (611,211,068)	$ -
TOTAL RATE BASE (STL Water)	**$ 1,668,076,711**			**$ 18,634,072**	**$ 69,642,589**	**$ 194,083,847**	**$ 162,134,298**	**$ 896,893,009**	**$ 7,937,420**	**$ 155,120,584**	**$ 79,617,277**	**$ 18,831,410**	**$ 65,182,205**	**$ 1,668,076,711**	**$ -**
TOTAL MO RATE BASE	**$ 1,668,076,711**														

MAWC Class Cost of Service Study
Case Nos. WR-2022-0303 | SR-2022-0304

Schedule JAY-1

Missouri-American Water Company
Class Cost of Service Study - Account Detail
Case No: WR-2022-0303, SR-2022-0304

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Miscellaneous T&D Operating Expense	$ 1,578,087	1	$ -	$ -	$ -	$ -	$ 101,553	$ 971,846	$ -	$ 504,688	$ -	$ -	$ -	$ 1,578,087	
				-	-	-	0.06435	0.61584	-	0.31981	-	-	-	1.00000	
Miscellaneous T&D Maintenance Expense	$ 931,957	2		$ -	$ -	$ -	$ 23,026	$ 220,357	$ -	$ 128,120	$ 311,864	$ -	$ 248,590	$ 931,957	
				-	-	-	0.02471	0.23645	-	0.13747	0.33463	-	0.26674	1.00000	
Fixed O&M	$ 31,326,516	3		$ 1,068,841	$ 2,171,593	$ 6,585,318	$ 749,178	$ 7,169,519	$ -	$ 3,842,862	$ 2,726,765	$ 5,320,801	$ 2,173,533	$ 31,808,410	
				0.03360	0.06827	0.20703	0.02355	0.22540	-	0.12081	0.08572	0.16728	0.06833	1.00000	
Labor	$ 27,708,698	4		$ 285,178	$ 1,690,742	$ 4,526,860	$ 464,709	$ 4,447,195	$ -	$ 2,344,699	$ 889,402	$ 692,758	$ 714,101	$ 16,055,644	
				0.01776	0.10531	0.28195	0.02894	0.27699	-	0.14604	0.05539	0.04315	0.04448	1.00000	
Net Plant	$ 2,261,125,417	5		$ 22,045,617	$ 82,742,632	$ 230,487,454	$ 215,020,959	$ 1,296,948,718	$ 9,223,269	$ 189,765,076	$ 107,855,789	$ 23,170,672	$ 82,767,650	$ 2,260,027,835	
				0.00975	0.03661	0.10198	0.09514	0.57386	0.00408	0.08397	0.04772	0.01025	0.03662	1.00000	
Rate Base	$ 1,668,076,711	6		$ 18,634,072	$ 69,642,589	$ 194,083,847	$ 162,134,298	$ 896,893,009	$ 7,937,420	$ 155,120,584	$ 79,617,277	$ 18,831,410	$ 65,182,205	$ 1,668,076,711	
				0.01117	0.04175	0.11635	0.09720	0.53768	0.00476	0.09299	0.04773	0.01129	0.03908	1.00000	
Variable Cost	$ 20,435,288			$ 4,608,894	$ 3,008,720	$ 12,817,674	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,435,288	
COS Basis for Utility Reg Asessment				$ 9,666,588	$ 20,156,483	$ 59,929,041	$ 21,995,680	$ 132,988,746	$ 1,090,886	$ 32,188,856	$ 21,287,645	$ 14,271,780	$ 13,988,720	$ 327,564,425	

Missouri-American Water Company
Cost of Service Study - Usage Statistics
Case No: WR-2022-0303, SR-2022-0304

	Residential	Non Residential	Rate J	Rate B	Contracts	Public Fire	Rate F Private Fire	Total	
Total Usage	230,200,596	76,083,359	32,593,962	16,156,639	24,293,869		522,754	379,851,179	hundred gallons
Average Day Usage	630,687	208,448	89,299	44,265	66,559	-	1,432	1,040,688	hundred gallons
Max Day Capacity Factor	1.97	2.09	1.38	1.24	1.26			---	
Max Day Usage	1,242,453	435,655	123,265	54,888	83,864	93,091	26,909	2,060,125	hundred gallons
Extra Capacity	611,766	227,208	33,966	10,624	17,305	93,091	25,477	1,019,437	hundred gallons
Fire Allocator						0.7758	0.2242	1.0000	20,000 gpm for 10 hours
Distribution Multiplier	1.00	1.00	0.01037	0.21		1.00	1.00	N/A	
Average Hourly Usage	26,279	8,685	39	383	-	-	60	35,446	hundred gallons
Max Hour Capacity Factor	3.98	3.52	1.38	1.24	1.26			---	
Max Hour Usage	104,589	30,572	53	475	-	13,964	4,036	153,690	hundred gallons
Extra Capacity	78,310	21,887	15	92	-	13,964	3,977	118,244	hundred gallons
Customers	322,445	17,860	135	4	2		7,480	347,926	
Hydrants						32,467	38	32,505	
Revenue	$ 167,224,457	$ 49,403,315	$ 6,252,876	$ 4,232,070	$ 3,977,486		$ 3,759,239	$ 234,849,443	

	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Meter Weighting	Service Weighting
5/8-METER	285,742	7,343	-	-	-		-	1.0	1.0
3/4-METER	24,390	3,049	-	-	-		-	1.5	1.0
1-METER	10,633	2,222	3	-	-		-	2.5	2.9
1.5-METER	757	1,111	-	-	-		-	5.0	4.0
2-METER	1,029	3,329	6	-	-		135	8.0	5.6
3-METER	21	306	3	-	-		1	16.0	5.6
4-METER	25	214	19	-	-		553	25.0	6.4
6-METER	24	204	20	-	-		2,291	50.0	9.9
8-METER	43	241	9	-	-		1,330	80.0	9.9
10-METER	3	57	7	-	-		33	115.0	9.9
12-METER	-	-	-	-	-		82	215.0	12.2
16-METER	-	-	-	-	-		-	320.0	12.2

Missouri-American Water Company
Cost of Service Study - Usage Statistics
Case No: WR-2022-0303, SR-2022-0304

System Load Factor:	0.5560	1,871,762	max day - thousand gallons per day	Average system hourly flow on max day
System Load Factor (fire):	0.5229	1,990,330	max day with fire - thousand gallons per day	Average system hourly flow on max day
System Load Factor (Hourly)	0.3738	94,815	max hour - thousand gallons per day	
System Load Factor (Hourly fire)	0.3144	112,755	max hour with fire - thousand gallons per day	

Mains Statistics

Type		Pct
Transmission	2,268,236	0.0946
Distribution	21,706,675	0.9054
Total	23,974,911	1.0000

Storage Statistics

Total Capacity	1,034,700	hundred gallons (2021 annual report)
Fire Allocation	0.1146	percentage of storage needed for maximum fire protection day
Non-Fire Allocation	0.8854	

Missouri-American Water Company
Cost of Service Study - Class Allocators
Case No: WR-2022-0303, SR-2022-0304

1. VARIABLE COST

Item	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total	Units
Total Usage	230,200,596	76,083,359	32,593,962	16,156,639	24,293,869	-	522,754	379,851,179	hundred gallons
Allocator	**0.6060**	**0.2003**	**0.0858**	**0.0425**	**0.0640**	**-**	**0.0014**	**1.0000**	

2. BASE/EXTRA DAILY

Item	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total	Units
Average Daily Use	630,687	208,448	89,299	44,265	66,559	-	1,432	1,040,688	hundred gallons
Extra Capacity	611,766	227,208	33,966	10,624	17,305			900,869	hundred gallons
System Capacity Factor	0.5560								
Average Day Allocator	0.3369	0.1114	0.0477	0.0236	0.0356	-	0.0008	0.5560	
Extra Capacity Allocator	0.3015	0.1120	0.0167	0.0052	0.0085	-	-	0.4440	
Allocator	**0.6385**	**0.2233**	**0.0644**	**0.0289**	**0.0441**	**-**	**0.0008**	**1.0000**	

3. BASE/EXTRA DAILY (w FIRE PROTECTION)

Item	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total	Units
Average Daily Use	630,687	208,448	89,299	44,265	66,559	-	1,432	1,040,688	hundred gallons
Extra Capacity	611,766	227,208	33,966	10,624	17,305	93,091	25,477	1,019,437	hundred gallons
System Capacity Factor	0.5229	assuming fire protection							
Average Day Allocator	0.3169	0.1047	0.0449	0.0222	0.0334	-	0.0007	0.5229	
Extra Capacity Allocator	0.2863	0.1063	0.0159	0.0050	0.0081	0.0436	0.0119	0.4771	
Combined Allocator	**0.6032**	**0.2111**	**0.0608**	**0.0272**	**0.0415**	**0.0436**	**0.0126**	**1.0000**	

4. BASE/EXTRA HOURLY (w FIRE PROTECTION)

Item	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total	Units
Average Hourly Use	26,279	8,685	39	383	-	-	60	35,446	hundred gallons
Extra Capacity	78,310	21,887	15	92	-	13,964	3,977	118,244	hundred gallons
System Capacity Factor	0.3144	assuming fire protection							
Average Day Allocator	0.2331	0.0770	0.0003	0.0034	-	-	0.0005	0.3144	
Extra Capacity Allocator	0.4541	0.1269	0.0001	0.0005	-	0.0810	0.0231	0.6856	
Combined Allocator	**0.6871**	**0.2039**	**0.0004**	**0.0039**	**-**	**0.0810**	**0.0236**	**1.0000**	

Missouri-American Water Company
Cost of Service Study - Class Allocators
Case No: WR-2022-0303, SR-2022-0304

5. STORAGE

Item	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total	Units
Average Hourly Use	26,279	8,685	3,721	1,844	2,773		60	43,362	
Extra Capacity	78,310	21,887	1,415	443	721		----	102,776	
Fire Allocator							1.00000	1.00000	
System Capacity Factor	0.3144	assuming fire protection							
Average Day Allocator	0.1905	0.0630	0.0270	0.0134	0.0201		0.0004	0.3144	
Extra Capacity Allocator	0.5224	0.1460	0.0094	0.0030	0.0048			0.6856	
Allocator	0.7129	0.2090	0.0364	0.0163	0.0249		0.0004	1.0000	
Non-Fire Allocation of Storage	0.88541								
Fire Allocaton of Storage	0.11459								
Non-Fire Allocator	0.6312	0.1850	0.0322	0.0145	0.0221	-	0.0004	0.8854	
Fire Allocator	-	-	-	-	-	-	0.1146	0.1146	
Combined Allocator	**0.6312**	**0.1850**	**0.0322**	**0.0145**	**0.0221**	**-**	**0.1150**	**1.0000**	

6. MAINS

Item	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total	Units
Factor 3	0.6032	0.2111	0.0608	0.0272	0.0415	0.0436	0.0126	1.0000	hundred gallons
Factor 4	0.6871	0.2039	0.0004	0.0039	-	0.0810	0.0236	1.0000	hundred gallons
Tranmission Weighting	0.0946		Average system hourly load						
Distribution Weighting	0.9054		Average system hourly load - max day with fire protection (incremental)						
Combined Allocator	**0.6792**	**0.2046**	**0.0061**	**0.0061**	**0.0039**	**0.0774**	**0.0226**	**1.0000**	

7. HYDRANTS

Item	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total	Units
Total Hydrants	-	-	-	-	-	32,467	38	32,505	
Allocator	**-**	**-**	**-**	**-**	**-**	**0.99883**	**0.00117**	**1.00000**	

Missouri-American Water Company
Cost of Service Study - Class Allocators
Case No: WR-2022-0303, SR-2022-0304

8. METERS

Item	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total	Weighting
5/8-METER	285,742	7,343	-	-	-			293,085	1.0
3/4-METER	24,390	3,049	-	-	-			27,439	1.5
1-METER	10,633	2,222	3	-	-			12,858	2.5
1.5-METER	757	1,111	-	-	-			1,868	5.0
2-METER	1,029	3,329	6	-	-			4,364	8.0
3-METER	21	306	3	-	-			330	16.0
4-METER	25	214	19	-	-			258	25.0
6-METER	24	204	20	-	-			248	50.0
8-METER	43	241	9	-	-			293	80.0
10-METER	3	57	7	-	-			67	115.0
12-METER	-	-	-	-	-			-	215.0
16-METER	-	-	-	-	-			-	320.0
Total	366,877	95,959	3,104	-	-		-	465,940	-----
Allocator	**0.78739**	**0.20595**	**0.00666**	**-**	**-**		**-**	**1.00000**	

9. SERVICES

Item	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total	Weighting
5/8-METER	285,742	7,343	-	-	-		-	293,085	1.0
3/4-METER	24,390	3,049	-	-	-		-	27,439	1.0
1-METER	10,633	2,222	3	-	-		-	12,858	2.9
1.5-METER	757	1,111	-	-	-		-	1,868	4.0
2-METER	1,029	3,329	6	-	-		135	4,499	5.6
3-METER	21	306	3	-	-		1	331	5.6
4-METER	25	214	19	-	-		553	811	6.4
6-METER	24	204	20	-	-		2,291	2,539	9.9
8-METER	43	241	9	-	-		1,330	1,624	9.9
10-METER	3	57	7	-	-		33	100	9.9
12-METER	-	-	-	-	-		82	82	12.2
16-METER	-	-	-	-	-		-	-	12.2
Total	351,118	47,906	537	-	-		41,525	441,086	-----
Allocator	**0.79603**	**0.10861**	**0.00122**	**-**	**-**		**0.09414**	**1.00000**	

10. CUSTOMERS

Item	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total
Total Customers	322,445	17,860	135	4	2		7,480	347,926
Allocator	**0.92676**	**0.05133**	**0.00039**	**0.00001**	**0.00001**		**0.02150**	**1.00000**

Missouri-American Water Company
Cost of Service Study - Class Allocators
Case No: WR-2022-0303, SR-2022-0304

11. METERED CUSTOMERS

Item	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total
Total Customers	322,445	17,860	135	4	2		7,480	347,926
Allocator	**0.92676**	**0.05133**	**0.00039**	**0.00001**	**0.00001**		**0.02150**	**1.00000**

Missouri-American Water Company
Cost of Service Study - Allocator Summary
Case No: WR-2022-0303, SR-2022-0304

Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Notes
A	Source of Supply	1.00000	-	-	-	-	-	-	-	-	-	1.00000	
B	Pumping	-	1.00000	-	-	-	-	-	-	-	-	1.00000	
C	Water Treatment	-	-	1.00000	-	-	-	-	-	-	-	1.00000	
D	Transmission	-	-	-	1.00000	-	-	-	-	-	-	1.00000	
E	Distribution	-	-	-	-	1.00000	-	-	-	-	-	1.00000	
F	Storage	-	-	-	-	-	1.00000	-	-	-	-	1.00000	
G	Meters	-	-	-	-	-	-	1.00000	-	-	-	1.00000	
H	Services	-	-	-	-	-	-	-	1.00000	-	-	1.00000	
I	Customers	-	-	-	-	-	-	-	-	1.00000	-	1.00000	
J	Hydrants	-	-	-	-	-	-	-	-	-	1.00000	1.00000	
K	Mains	-	-	-	0.09461	0.90539	-	-	-	-	-	1.00000	
1	T/D Oper. Expense	-	-	-	0.06435	0.61584	-	0.31981	-	-	-	1.00000	
2	T/D Maint.. Expense	-	-	-	0.02471	0.23645	-	0.13747	0.33463	-	0.26674	1.00000	
3	Fixed O&M	0.03360	0.06827	0.20703	0.02355	0.22540	-	0.12081	0.08572	0.16728	0.06833	1.00000	
4	Labor	0.01776	0.10531	0.28195	0.02894	0.27699	-	0.14604	0.05539	0.04315	0.04448	1.00000	
5	Net Plant (less gen. and int.)	0.00975	0.03661	0.10198	0.09514	0.57386	0.00408	0.08397	0.04772	0.01025	0.03662	1.00000	
6	Rate Base	0.01117	0.04175	0.11635	0.09720	0.53768	0.00476	0.09299	0.04773	0.01129	0.03908	1.00000	
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Alloc	Description	Residential	Non Residential	Rate J	Rate B	Rate P	Public Fire	Rate F Private Fire	Total
1	Total Usage	0.60603	0.20030	0.08581	0.04253	0.06396	-	0.00138	1.00000
2	Base/Extra Daily	0.63847	0.22335	0.06445	0.02888	0.04409	-	0.00077	1.00000
3	Base/Extra Daily w/ Fire	0.60320	0.21107	0.06076	0.02721	0.04154	0.04357	0.01264	1.00000
4	Base/Extra Hourly w/ Fire	0.68714	0.20394	0.00043	0.00393	-	0.08097	0.02359	1.00000
5	Storage	0.63124	0.18503	0.03224	0.01445	0.02206	-	0.11497	1.00000
7	Hydrants	-	-	-	-	-	0.99883	0.00117	1.00000
8	Meters	0.78739	0.20595	0.00666	-	-	-	-	1.00000
9	Services	0.79603	0.10861	0.00122	-	-	-	0.09414	1.00000
10	Customers	0.92676	0.05133	0.00039	0.00001	0.00001	-	0.02150	1.00000
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DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2022-0303
General Rate Case

Requested From: Brian LaGrand

Date Requested: 11/14/2022

Information Requested:

Please refer to Schedule WES-1, page 1, Summary tab.

a. Please explain why Power and Pumping expenses have been allocated using Factor 2 in the current study, when historically they have been allocated using Factor 3.

b. Please confirm that the class cost of service study ("CCOSS") indicates that an 88.2% increase is needed for the St. Louis County Rate J class to reach cost of service.

c. Please provide a detailed explanation of the drivers of the 88.2% increase for Rate J in St. Louis County.

d. Please confirm that, according this CCOSS, the St. Louis County Rate J class requires an increase equal to 2.14 times the system average increase to reach cost of service (i.e., 88.2% / 41.2%). If the response is anything other than an unqualified confirmation, please provide a detailed explanation supporting the response.

Requested By: Jamie Reifsteck – jreifsteck@chgolaw.com

Information Provided:

a. The use of Factor 2 for the allocation of Power and Pumping expenses was inadvertent. MAWC has acknowledged in prior proceedings that Factor 3 is appropriate for the allocation of these expenses.
b. As shown on Schedule WES-1, Page 1, an increase of 88.2% is needed to bring the Rate J rate class in MAWC's St. Louis County service territory to its cost of service.
c. Please see the Company's revenue requirement schedules and supporting direct testimony. Since the Company's last base rate case in 2020, MAWC has or will invest approximately $769 million of capital by the operation of law date in this case. These investments enhance the safety, reliability and resiliency of Missouri-American's water and wastewater system, support customer service, and maintain the health, welfare, and economic wellbeing of the communities we serve.

d. As shown on Schedule WES-1, Page 1, the St. Louis County Rate J class requires an increase of 88.2%. Also shown on the same schedule is the system average increase for MAWC's St. Louis County service territory which is 41.2%.

Responsible Witness: Wes Selinger

DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2022-0303
General Rate Case

Requested From: Brian LaGrand

Date Requested: 11/03/2022

Information Requested:

Please refer to the direct testimony of Mr. Selinger at page 11, lines 10-13.

a. In electronic spreadsheet format with all formulas intact, please provide the calculations used to estimate the percentage of water sales served to each class in St. Louis County directly from the transmission system.
b. In electronic spreadsheet format with all formulas intact, please provide the calculations used to estimate the percentage of water sales served to each class outside of St. Louis County directly from the transmission system.
c. For each customer that takes service under Rate J in St. Louis County, please identify the size of mains used to provide service that customer, and the test year water usage associated with each main size serving that customer.
d. For each customer that takes service under Rate J outside of St. Louis County, please identify the size of mains used to provide service that customer, and the test year water usage associated with each main size serving that customer.

Requested By: Jamie Reifsteck – jreifsteck@chgolaw.com

Information Provided:

CONFIDENTIAL - The information provided is deemed "Confidential" in accordance with Commission Rule 20 CSR 4240-2.135(2)(A) 1, as it contains customer specific information. We ask that confidentiality be maintained consistent with that Rule and/or Section 386.480 RSMo, as the case may be.

a. Please refer to the file called "Distribution Multiplier Support MO COSS" file that was provided in the Company's response to MoPSC 0243.
b. Please see response to (a) above.
c. Please see 2022 GRC – MIEC 02-5_Attachement 1 - CONFIDENTIAL.
d. Please see the response to (c) above.

Responsible Witness: Wes Selinger

DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2022-0303
General Rate Case

Requested From: Brian LaGrand

Date Requested: 09/28/2022

Information Requested:

Please provide a copy of Mr. Rea's direct workpaper, "MO COSS All Other Water" with all formulas intact.

Requested By: Keri Roth – Keriann.roth@psc.mo.gov

Information Provided:

The requested files have been provided to Staff electronically.

Responsible Witness: Wesley Selinger

DATA INFORMATION REQUEST
Missouri-American Water Company
WR-2022-0303
General Rate Case

Requested From: Brian LaGrand

Date Requested: 11/14/2022

Information Requested:

Please refer to Schedule WES-1, Account Detail Tab, page 2 of 9.

a. Regarding Transmission and Distribution ("T&D") Operation and Maintenance ("O&M") expense, please identify the account(s) in which these expenses are recorded. Please indicate whether they are recorded in a single account, or whether they are tracked and recorded in separate accounts.

b. Please confirm that the separation of T&D O&M expense between functions (i.e., Transmission, Distribution, Meters, and Services) reflects an estimate of the cost by function based on an allocation factor, rather than the actual cost by function. If the response is anything other than an unqualified confirmation, please provide a detailed explanation supporting the response.

c. Please provide a detailed explanation for allocating the T&D Operating expense across functions based on Misc. T&D Operating Expense.

d. Please provide a detailed explanation for allocation the T&D Maintenance expense across functions based on Misc. T&D Maintenance Expense.

e. Please confirm that the Misc. T&D Operating Expense, and Misc. T&D Maintenance Expense has been split between the Transmission and Distribution functions based on an allocation factor related to mains, rather than actual costs that are tracked and recorded by function. If the response is anything other than an unqualified confirmation, please provide a detailed explanation supporting the response.

Requested By: Jamie Reifsteck – jreifsteck@chgolaw.com

Information Provided:

Please also refer to Schedule WES-1, Account Detail Tab, page 2 of 9.

a. Please see the attached file "2022 GRC – MIEC 3-04_Attachment 1." Costs in Transmission and Distribution expense (both operating and miscellaneous) are costs that are not directly assigned to any particular T&D function but are generally assigned to T&D activities. They are therefore allocated to the specific transmission, distribution, meters, and services functions based on all of the directly assigned operation and maintenance costs to those functions.

b. The separation of transmission and distribution operation and maintenance expense between functions is done with the use of an allocation factor. Please see the response to (a) above.

c. Main costs are not directly assigned in the accounting system between Transmission and Distribution. Mains costs are allocated based on the number of miles of main in the MAWC system as shown on the usage statistics tab.

d. Please see the response to (c) above.

e. Please see the responses to (c) and above.

Responsible Witness: Wes Selinger

Missouri American Water

Account#	Full Account Name	Alternative Account No.	Rate Year (Water)	Category (1)	Category (2)	Category (3)
50101400	50101400 Labor Oper Transmission & Distribution	A665	$ 4,083,963.00	Operations Expense	General T/D	Salaries and Wages
50101405	50101405 Labor Oper Trans & Distr - Super & Eng	A660	$ 65,770.00	Operations Expense	General T/D	Salaries and Wages
50102400	50102400 Labor Maint Transmission & Distribution	A678	$ 1,360,828.00	Maintenance Expense	General T/D	Salaries and Wages
50102405	50102405 Labor Maint Transmssn & Distr - Super & Eng	A670	$ 55,479.00	Maintenance Expense	General T/D	Salaries and Wages
50111400	50111400 Labor Oper Non-scheduled Overtime- TD	A665	$ 429,282.00	Operations Expense	General T/D	Salaries and Wages
50111405	50111405 Labor Oper Non-scheduled Overtime- TD Super & Eng	A660	$ 254.00	Operations Expense	General T/D	Salaries and Wages
50112400	50112400 Labor Maint Non-scheduled Overtime- TD	A678	$ 311,461.00	Maintenance Expense	General T/D	Salaries and Wages
50112405	50112405 Labor Maint Non-scheduled Overtime- TD Super & Eng	A670	$ 32.00	Maintenance Expense	General T/D	Salaries and Wages
50121400	50121400 Labor Oper Scheduled Overtime-TD	A665	$ 37,144.00	Operations Expense	General T/D	Salaries and Wages
50122400	50122400 Labor Maint Scheduled Overtime-TD	A678	$ 14,196.00	Maintenance Expense	General T/D	Salaries and Wages
50450014	50450014 Other Welfare - Transm & Distrib	A926	$ 10,863.00	Operations Expense	General T/D	Employee Benefits
51510014	51510014 Purchased Power - Transmission & Distribution	A665	$ 457,785.00	Operations Expense	General T/D	Fuel and Power
52001400	52001400 M & S Oper - Transmission & Distribution	A665	$ 55,062.00	Operations Expense	General T/D	Materials & Supplies
52501400	52501400 Misc Oper - Transmission & Distribution	A665	$ 44,632.00	Operations Expense	General T/D	Miscellaneous
52532014	52532014 Electricity - Transmission & Distribution	A665	$ 11,255.00	Operations Expense	General T/D	Building Maintenance and Services
52546014	52546014 Grounds Keeping - Transmission & Distribution	A665	$ 82,097.00	Operations Expense	General T/D	Building Maintenance and Services
52548014	52548014 Heating Oil/Gas - Transmission & Distribution	A665	$ 12,730.00	Operations Expense	General T/D	Building Maintenance and Services
52550014	52550014 Janitorial - Transmission & Distribution	A665	$ 24,221.00	Operations Expense	General T/D	Building Maintenance and Services
52562014	52562014 Office & Admin Supplies - Transmssn & Distr	A665	$ 9,369.00	Operations Expense	General T/D	Office supplies and services
52562514	52562514 Overnight Shipping - Transmission & Distribution	A665	$ -	Operations Expense	General T/D	Office supplies and services
52571014	52571014 Security Service - Transmission & Distribution	A665		Operations Expense	General T/D	Building Maintenance and Services
52574014	52574014 Telephone - Transmission & Distribution	A665	$ 57,522.00	Operations Expense	General T/D	Telelcommunications
52574114	52574114 Cell Phone - Transmission & Distribution	A665	$ 13,740.00	Operations Expense	General T/D	Telelcommunications
52574314	52574314 Wireless - Service First-Transmission&Distribution	A665		Operations Expense	General T/D	Telelcommunications
52578014	52578014 Trash Removal - Transmission & Distribution	A665	$ 2,062.00	Operations Expense	General T/D	Building Maintenance and Services
52582014	52582014 Uniforms - Transmission & Distribution	A665	$ 35,531.00	Operations Expense	General T/D	Office supplies and services
52583014	52583014 Water & WW - Transmission & Distribution	A665	$ 1,048.00	Operations Expense	General T/D	Building Maintenance and Services
53110014	53110014 Contract Svc-Eng - Transmission & Distribution	A923	$ 37,650.00	Operations Expense	General T/D	Contract Services - Eng
53150014	53150014 Contract Svc-Other - Transmission & Distribution	A923	$ 1,259,667.00	Operations Expense	General T/D	Contract Services - Other
53151014	53151014 Contract Svc-Temp Empl - Transmssn & Distr	A923	$ 2,954.00	Operations Expense	General T/D	Contract Services - Other
54110014	54110014 Rents-Real Property - Transmission & Distribution	A666	$ 163.00	Operations Expense	General T/D	Rents-Property
54140014	54140014 Rents-Equipment - Transmission & Distribution	A666	$ 4,144.00	Operations Expense	General T/D	Rents-Equipment
55000014	55000014 Transportation Oper - Transmission & Distribution	A662	$ 196,349.00	Operations Expense	General T/D	Transportation
55000024	55000024 Transportation Maint - Transmission & Distribution	A673	$ 958,837.00	Maintenance Expense	General T/D	Transportation
62002400	62002400 M&S Maint - Transmission & Distribution	A678	$ 1,017,496.00	Maintenance Expense	General T/D	Materials & Supplies
62502400	62502400 Misc Maint - Transmission & Distribution	A678	$ 72,421.00	Maintenance Expense	General T/D	Miscellaneous
62512400	62512400 Amort Def Maint - Transmission & Distribution	A678	$ 37,011.00	Maintenance Expense	General T/D	Miscellaneous
62520700	62520700 Misc Maint Paving/Backfill	A673	$ 925,600.00	Maintenance Expense	General T/D	Miscellaneous
62520800	62520800 Misc Maint Permits - Natural Account	A678		Maintenance Expense	General T/D	Miscellaneous
62520824	62520824 Misc Maint Permits - Transmission & Distribution	A678	$ 82,356.00	Maintenance Expense	General T/D	Miscellaneous
63110024	63110024 Contract Svc-Eng Maint - Transmission & Distr	A923	$ 94,411.00	Maintenance Expense	General T/D	Contract Services - Eng
63150024	63150024 Contract Svc-Other Maint - Transmission & Distr	A923	$ 2,286,428.00	Maintenance Expense	General T/D	Contract Services - Other

Missouri American Water Company

Company Full Certificated Name

Do not abbreviate; include any Commission approved AKA/DBA/Fictitious Name, if applicable.

WATER and/or SEWER ANNUAL REPORT

LARGE COMPANY

(with 8,000 or more customers)

TO THE

MISSOURI PUBLIC SERVICE COMMISSION

For the calendar year of

January 1 - December 31, 2021

This filing is required pursuant to Commission Rule 20 CSR 4240-10.145 and/or Section 393.140, RSMo.

Please indicate which type of service the Company is certificated to provide by checking the appropriate box(es). *(Check all that apply.)*

☑ **Water Service Provider**

☑ **Sewer Service Provider**

Please choose one of the following filing type options:

◉ **Public Submission** (NOT Confidential)

○ **Non-Public Submission (Confidential / Filed Under Seal)**
For this filing to be considered Confidential, additional submission of materials is required pursuant to Commission Rule 20 CSR 4240-2.135.

Excel Issue Date: 12/12/2019

(To be used when filing under seal.)

TABLE OF CONTENTS

St. Louis

Missouri American Water Company
For the Year Ended December 31, 2021
Feet of Transmission & Distribution Mains

Kind of Pipe	Diameter in Inches	In Use first of year	Added During Year			Retirements During the Year	In Use at the end of the year
			New Mains	Replacements	Total		
DI, CI, HDPE, PVC	16	430,174.6		18,150.0	18,150.0	11,436.0	436,888.6
DI, CI	18	1,106.3		-	-		1,106.3
DI, CI, PVC	20	814,957.5		6,451.0	6,451.0	3,579.0	817,829.5
DI, CI, HDPE	24	386,149.2		5,088.0	5,088.0	2,324.0	388,913.2
DI, CI	30	262,356.4		4,224.0	4,224.0	2,591.0	263,989.4
HDPE	32	1,275.0		-	-		1,275.0
DI, CI, AC	36	276,516.2		-	-	17.0	276,499.2
DI, CI	42	69,709.4		-	-		69,709.4
Gal	54	89.0		-	-		89.0
DI, CI, AC	54	6,998.5		-	-		6,998.5
DI, CI, AC	60	4,938.3		-	-		4,938.3
Total Transmission		**2,254,270.4**	**-**	**33,913.0**	**33,913.0**	**19,947.0**	**2,268,236.4**
DI, CI, PVC, AC, Galv	4	488,444.4		575.0	575.0	10,193.0	478,826.4
DI, CI, PVC, AC	6	11,754,700.8	1,477.0	18,109.0	19,586.0	172,990.0	11,601,296.8
DI, CI, PVC, AC	8	6,706,828.0	7,077.0	136,933.0	144,010.0	51,149.0	6,799,689.0
HDPE	8	23,243.3		1,949.0	1,949.0		25,192.3
DI, CI, PVC	10	50,497.6		47.0	47.0	426.0	50,118.6
DI, CI, PVC	12	2,666,465.0	3,482.0	69,657.0	73,139.0	28,704.0	2,710,900.0
HDPE	12	11,343.2		1,679.0	1,679.0		13,022.2
DI,CI, PVC, Galv	3 or less	27,900.3		73.0	73.0	986.0	26,987.3
Misc		642.2			-		642.2
Total Distribution		**21,730,064.8**	**12,036.0**	**229,022.0**	**241,058.0**	**264,448.0**	**21,706,674.8**

SERVICES

Size and Kind of Pipe (a)	Utility Owned Services In Use				Services In Use at End of Year not Included in Plant Accts. (f)
	Beginning of Year (b)	Added During the Year (c)	Removed or Disconnected During the Year (d)	End of Year (e)	
1" Copper	122	1,543		1,665	
1-1/2" Copper	46	200		246	
1-1/4" Copper	4	8		12	
2" Copper	6	40		46	
3/4" Copper	25	560		585	
12" Ductile Iron	-	3		3	
8" Ductil Iron	1	19		20	
6" Ductile	1	14		15	
4" Ductile Iron	-	6		6	
Total	205	2,393	-	2,598	-

Indicates formula cell.