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Witness: Caroline Palmer
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MISSOURI PUBLIC SERVICE COMMISSION

Case No.: WR-2024-0320

Direct Testimony of Caroline Palmer

(Cost of Service Study/Rate Design)

On Behalf of

Consumers Council of Missouri

December 20, 2024

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I. INTRODUCTION AND QUALIFICATIONS

Q Please state your name, title, and employer.

A My name is Caroline Palmer. I am a Principal Associate at Synapse Energy Economics, Inc. ("Synapse"), located at 485 Massachusetts Avenue, Suite 3, Cambridge, MA 02139.

Q Please describe Synapse Energy Economics, Inc.

A Synapse is a research and consulting firm specializing in utility regulation, planning, and analysis. Our work covers a range of issues, including economic and technical assessments of demand-side and supply-side energy resources; energy efficiency policies and programs; integrated resource planning; electricity market modeling and assessment; renewable resource technologies and policies; and climate change strategies. Synapse works for a wide range of clients, including state attorneys general, offices of consumer advocates, public utility commissions, environmental advocates, the U.S. Environmental Protection Agency, U.S. Department of Energy, U.S. Department of Justice, the Federal Trade Commission, and the National Association of Regulatory Utility Commissioners. Synapse has over 40 professional staff with extensive experience in the electricity industry.

Q Please summarize your professional and educational experience.

A I am a Principal Associate at Synapse where I provide expert witness and consulting services on behalf of public interest clients in regulatory proceedings. The issues I cover in these cases include marginal and embedded cost-of-service studies, revenue apportionment, advanced rate design, load management, decoupling, distributed energy resource (DER) interconnection and compensation, electric vehicle (EV) infrastructure investments, and pilot frameworks. Prior to joining Synapse I worked at Strategen

Consulting for five years performing similar work. I have submitted expert testimony in eleven dockets across six jurisdictions.

I was awarded a Fulbright Research Fellowship in Greece in 2019 and supported clean energy policy consulting at Meister Consultants Group (now Cadmus) before that. I hold a Master of Public Policy from the Goldman School at UC Berkeley and a Bachelor of Science from Georgetown University. I have 10 years of professional experience. My resume is attached as Attachment CP-1.

Q Have you previously provided testimony to the Missouri Public Service Commission?

A Yes, I sponsored testimonies in ER-2024-0319. I have also sponsored testimony before several other commissions, including the New York Public Service Commission, the Massachusetts Department of Public Utilities, the Maine Public Utilities Commission, the Oklahoma Corporation Commission, the North Carolina Utilities Commission, and the Nova Scotia Utility and Review Board. I have also assisted with testimonies and regulatory analyses in numerous other jurisdictions.

Q On whose behalf are you testifying in this case?

A I am testifying on behalf of the Consumers Council of Missouri (Consumers Council).

Q What is the purpose of your testimony?

A I address certain aspects of Missouri-American Water Company's (MAWC or Company) cost of service study (COSS) and 5/8- and 3/4-inch monthly fixed charge proposals. I reserve the right to comment on other issues in response to proposals offered by other parties, or information that becomes available after I prepared this testimony. The

absence of discussion of other topics in this testimony should not be construed as support for, or opposition to, the Company's positions.

II. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Q Please summarize your conclusions.

A My conclusions are:

- The Company's COSS may have allocated a lower proportion of distribution-level costs to Rates B and J and a higher proportion of costs to the other customer classes, including the residential class, due to both an error and a sampling assumption in calculating the distribution multiplier.
- The Company's proposed 5/8-inch monthly fixed charge increase of 113 percent and 3/4-inch monthly fixed charge increase of 57 percent violate widely accepted rate design principles and will have a disproportionate burden and rate shock on low-usage, low-income residential customers.
- The costs of lead service line replacements (LSLR) are extraordinary and public-policy-related. Including the LSLR costs in the services revenue requirement and collecting them through the monthly customer charge would exacerbate impacts on low-usage customers and reduce transparency.

Q What are your recommendations?

A I recommend that the Commission direct the Company to:

- Develop distribution multipliers based on the usage characteristics of a larger and more verifiably representative number of Rate J and B customers—ideally all customers in each class, respectively.

- Increase the 5/8 and 3/4 inch monthly fixed charges by $1.00 and correspondingly increase the volumetric rate in order to achieve the necessary revenue requirement increase.
- Track lead service line replacement costs separately from other service costs and collect them volumetrically through a dedicated line item on customer bills, rather than include them in the unit costs that inform the monthly customer charge.

III. COST OF SERVICE STUDY: DISTRIBUTION MULTIPLIER

Q What is the purpose of a COSS?

A A COSS is used to assign the utility's revenue requirement to each customer or rate class in proportion to the costs imposed on the system by those customers. Thus, a cost of service study seeks to determine what costs are incurred to serve each class of customers.

Q Do you have concerns about the Company's COSS?

A Yes. I am concerned about how the Company allocates the costs of distribution mains.

Q How does the Company allocate the costs of distribution mains?

A Because large customers under Rate J and Rate B (the rates for Manufacturers, Large Quantity users of Water, and Sale of Water for Resale) may take service directly from the transmission system[1] and therefore do not all use the distribution system, MAWC attempts to allocate larger customer classes only the distribution costs that are proportional their use of the system. To do so, the Company estimates the percentage of Rate J and Rate B's water usage that is served at the distribution level, and only allocates

[1] Transmission mains have a diameter of 10 inches and larger, while distribution mains are smaller than 10 inches. *See* McClellan Direct Testimony at10.

distribution costs to those classes based on the distribution-level usage, rather than based on total usage. The percentage of Rate J and B's total usage served at the distribution level is called the distribution multiplier. The Company used a distribution multiplier of 0.11 for Rate J customers both in the St. Louis County service area and outside of St. Louis County. It used a multiplier of 0.21 for Rate B customers in St. Louis County and 0.56 for Rate B customers outside of St. Louis County.[2]

Q Has the Company made an error regarding its distribution multipliers?

A Yes, the Company appears to use an erroneous distribution multiplier, 0.11, for Rate J customers in St. Louis County, which is lower than the multiplier indicated in its workpaper.[3]

Q What is the impact of using an erroneous distribution multiplier for Rate J customers in St. Louis County?

A Using a Rate J distribution multiplier that is lower than the multiplier indicated in the Company's workpaper means that a lower proportion of distribution-level costs are allocated to Rate J and a higher proportion of costs allocated to the other customer classes. Specifically, the results from the erroneous COSS would assign residential customers a 47.1 percent increase,[4] whereas the results from a corrected COSS would assign residential customers a 45.8 percent increase.[5]

Q Do you have other concerns with the Rate B and J distribution multipliers?

A Yes. I am concerned that the Company has not used a representative sample of customers with which to calculate its distribution multipliers. The Company estimates the

[2] "MO COSS All Other Water" tab "Usage Statistics" and "MO COSS St Louis Workpaper" tab "Usage Statistics."
[3] "2024 GRC - MIEC 1-12_Attachment 1 CONFIDENTIAL."
[4] "MO COSS St Louis Workpaper" tab "Summary."
[5] "CCM_MO COSS St Louis Workpaper" tab "Summary."

distribution-level sales for Rates B and J by analyzing the usage of its top 50 largest quantity users of water across all customer classes and districts [6] rather than the top 50 users for Rate B in St. Louis County and top 50 users for Rate B outside of St. Louis County, and so on. Thus, the sample size is far less than 50 for each of the four individual distribution multipliers that the Company ultimately calculates.

Q Are the largest quantity users of water representative of overall Rate J and B customer class usage?

A They likely are not. Based on the Company's statement that large customers take service directly from the transmission system,[7] it stands to reason that the largest users in the large customer classes might have higher transmission-level usage than the average customers in those classes. If those customers indeed have higher-than-average transmission-level usage, and therefore have lower-than-average distribution-level usage, then distribution multipliers based on their data would be lower than the overall classes' actual distribution system usage. This would not accurately represent cost causation and would result in the Company allocating a lower proportion of distribution-level costs to Rates B and J and a higher proportion of costs to the other customer classes, including residential.

Q Did you attempt to assess whether the top 50 largest quantity users of water are representative of the overall Rate J and B customer class usage?

A Yes. I asked the Company how distribution-level sales for the top 50 customers differ from the average distribution-level sales for Rates J and B. However, the Company "has

[6] MAWC's response to data request CCM-82.
[7] McClellan Direct Testimony at 11.

not prepared any analysis that includes customers smaller than the top 50 largest customers at this time."[8] It is unclear why the Company does not calculate precise allocators based on complete data from the relatively small number of customers in these classes, given the magnitude of these customers' water usage and the meaningful impact of distribution multipliers on revenue allocations in the COSS. The Company's subjective assumption about their representativeness impacts the study results in unquantifiable ways.

Q What do you recommend?

A I recommend that the Commission direct the Company to develop distribution multipliers based on the usage characteristics of a larger number of Rate J and B customers—ideally all customers in each class, respectively—and either select that larger group of customers in a more representative manner or verify with data that the distribution usage of the 50 largest water users is representative of the overall customer class populations.

IV. RATE DESIGN: RESIDENTIAL CUSTOMER CHARGE

Q Describe the Company's residential customer charge proposal.

A The Company proposes to increase the 5/8-inch meter charge, or monthly customer charge, from $10.00 per month to $21.34 per month, which is a 113 percent increase.[9] The 5/8-inch meter is the most common meter size for residential customers, with 90 percent of residential customers taking service under this meter size.[10] The Company also proposes to increase the 3/4-inch customer charge from $13.61 per month to $21.34 per

[8] MAWC's response to data request CCM-82.
[9] McClellan Direct Testimony at 29.
[10] 399,886 out of 444,422 residential customers use a 5/8 inch meter. *See* "2024 MO Rate Design Model" tab "Combined Meter Rates."

month, which is a 57 percent increase. A portion of residential customers takes service on 3/4-inch meters. The $21.34 charge represents the sum of the weighted annual unit costs per customer for the meter, service, and customer service revenue requirements.[11]

Q Do you have concerns about the Company's residential customer charge proposal?

A Yes. I have three concerns with the residential customer charge proposal:

- The proposed increases in the 5/8- and 3/4-inch customer charges would violate the widely accepted rate design principles of gradualism and efficiency;
- Higher fixed charges will have a disproportionate burden and rate shock on low-usage, low-income customers; and
- Including the unusual, public-policy-related costs of lead service line replacements in the service revenue requirement and fixed monthly charge would exacerbate impacts on low-usage customers and reduce transparency.

I discuss each concern below.

Rate Design Principles and Equity Considerations

Q Explain why MAWC's residential customer charge proposal violates widely accepted rate design principles.

A In direct testimony, the Company detailed several guiding principles for sound rate design, which are consistent with James Bonbright's widely recognized rate design principles.[12] However, the Company's proposed residential customer charge increase violates key principles, as I describe below:

[11] MAWC response to data request CCM-11.
[12] James Bonbright, *Principles of Public Utility Rates*, Columbia University Press, 1961, page 291.

- **Gradualism**: The Company notes that changes in rate design should avoid "inappropriate levels of rate shock" and cautions that drastic rate changes can cause customer confusion and dissatisfaction and adversely impact the utility's ability to provide quality customer service.[13] A 113 percent increase in the customer charge certainly seems drastic. Indeed, in the last rate case, MAWC proposed a 33 percent increase in the customer charge, from $9.00 to $12.00, despite the large differential between the $9.00 customer charge and the unit costs presented in that case.[14] A 113 percent increase is a dramatic departure from past proposed increases and should be considered an inappropriate level of rate shock.
- **Efficiency of Use**: The Company states that rates should be designed to encourage the efficient customer use of water resources, including "providing customers an appropriate incentive to conserve water and manage their bills."[15] However, raising the customer charge so drastically reduces customers' ability to control their own bills because it increases the fixed portion of the monthly bill over which customers have no control, even if they can reduce their consumption. A higher fixed charge also means a lower volumetric charge than there otherwise would have been. Relatively lower volumetric charges paired with higher fixed charges can discourage conservation by reducing the value to customers of adjusting their usage. By proposing to raise the customer charge all the way to the purported unit cost, the Company has not sought to balance cost with consideration of bill management and conservation.

[13] McClellan Direct Testimony at 24.
[14] Per "2024 GRC – CCM 0087 Attachment", unit costs were $16.57 for the St Louis Area and $20.04 for Other Missouri in WR-2024-0320.
[15] McClellan Direct Testimony at 24.

Q Why has the Company proposed a rate design that violates the principles of gradualism and efficiency?

A It appears that the Company is prioritizing the principles of revenue stability (i.e., greater assurance that the Company will recover its revenue requirement) [16] and cost over the principles of gradualism and efficiency.

Q Is the Company's prioritization of revenue stability warranted?

A No. Rate design must strike an appropriate balance among these principles, as they are often in conflict. Further, higher fixed charges are only one of many tools for ensuring the Company's revenue stability. Indeed, MAWC has requested several other mechanisms that serve to reduce its risk and increase revenue stability: a revenue stabilization mechanism to align the Company's revenues with the authorized amount; adoption of a production cost tracker allowing the Company to collect revenues associated with volatile production expenses; and two proposals to reduce regulatory lag on plant investments between general rate cases.[17]

Q Is it reasonable to more than double the customer charge given that the Company has proposed multiple other mechanisms to promote revenue stability?

A No. More than doubling the customer charge is particularly unreasonable given that the Company has proposed several other mechanisms that would reduce the risk of it under-collecting its revenue requirement.

[16] McClellan Direct Testimony at 23-24.
[17] Svindland Direct Testimony at 17-18.

Q Are there other policy considerations that should guide the evaluation of the Company's proposed residential customer charge increase?

A Yes, it is important to consider the fairness and equity of the proposal. The detrimental bill impact of the increased fixed charge that I described above, in which a higher fixed charge limits customers' ability to reduce their bills by moderating their consumption, would be more acute for low-usage customers whose bills are relatively smaller and therefore more influenced by the customer charge. Low-usage customers are also more likely to be low-income and therefore have less ability to pay higher bills.[18]

Q How should the Commission consider fairness and equity in evaluating the Company's rate design proposal?

A The Commission should consider the disproportionate burden and rate shock of higher fixed charges on low-usage, low-income customers when evaluating the Company's proposal to increase customer charges by 113 and 57 percent.

Lead Service Line Replacement Costs

Q Why shouldn't the Company include the cost of LSLR in the fixed monthly charge?

A Missouri American Water has voluntarily pledged to replace all lead/galvanized service lines in the communities it serves by 2030.[19] The costs of replacing lead service lines are substantial and will continue to grow for the next six years, as discussed below. The

[18] The Company has argued that there is a positive correlation between household income and the seasonal use of water, meaning that communities with higher household incomes generally have more discretionary seasonal use of water than communities with lower household incomes. Lower-income customers generally don't use water for discretionary purposes in the summertime—such as for filling swimming pools or lawn irrigation—to the extent that higher-income customers do and generally only use Basic Water Service for cooking, cleaning, sanitation, and general health requirements. *See* Rea Direct Testimony at 28.

[19] "Lead And Drinking Water." Missouri American Water. https://amwater.com/moaw/Water-Quality/Lead-And-Drinking-Water/.

Commission has deemed these investments to be extraordinary,[20] public-policy-related costs.[21] Given that these unusual and extraordinary costs "are not the result of a normal utility policy or practice,"[22] these costs should not be included in the standard services revenue requirement or collected through the customer charge.

Q How would including the LSLR costs in the customer charge impact customers?

A Inclusion of the LSLR costs in the standard services revenue requirement and collection through the monthly customer charge would exacerbate the rate shock and equity concerns I described above.

Q How should MAWC recover the LSLR costs?

A I recommend that MAWC track the LSLR costs separately from other service costs and collect them volumetrically through a dedicated line item on customer bills. Not only will this transparently signal to customers why costs are rising, but it should also be easier to track and take off the bill when fully amortized.

Q Describe the LSLR costs and their impact on the monthly fixed customer charge.

A MAWC defers the costs of customer-owned LSLRs and amortizes them over ten years.[23] Of the $50,381,462 services revenue requirement in this rate case, $5,983,888 (11.9 percent) is the amortization of costs related to the replacement of customer-owned lead service lines.[24] This does not even include the cost of replacing Company-owned lead service lines, which MAWC has not analyzed. Removing customer-owned LSLR costs from the services revenue requirement reduces the 5/8- and 3/4-inch unit costs to $20.45

[20] Commission Report and Order in WU-2017-0296. November 30, 2017. At 7.
[21] "The public policy related to lead in drinking water and its adverse health effects is particularly persuasive in this case." *See* Id at 9.
[22] Id at 7.
[23] Commission Report and Order in WR-2022-0303. May 3, 2023.
[24] MAWC's response to data request CCM-88d.

from $21.34.[25] This cost impact is certain to increase in the future if the Company fulfills its pledge. Since 2017, the Company has replaced several hundred lead service lines each year, rising to more than 4,000 for the past two years.[26] The Company estimates that it will replace 4,777 lead service lines annually from 2025–2030.[27] Therefore, it is important to address the rate treatment for these costs before they grow any greater. Omitting them from the services revenue requirement for the purposes of collecting them volumetrically acknowledges their extraordinary and public-policy nature.

Customer Charge Conclusions

Q Please summarize your customer charge conclusions and recommendations.

A I find that the Company's proposed 5/8- and 3/4-inch monthly fixed charge increases of 113 percent and 57 percent, respectively, violate widely accepted rate design principles and impose a disproportionate burden and rate shock on low-usage, low-income customers. Further, the Company should not include the cost of lead service line replacements in the fixed charge.

Q What do you recommend?

A I recommend that the Company increase the 5/8- and 3/4-inch monthly fixed charges by $1.00, as in the last case for 5/8-inch meters, and accordingly increase the residential volumetric rate as necessary in order to achieve the required revenue requirement increase. An increase in the fixed charge of $1.00 per month strikes an appropriate balance between equity, efficiency, gradualism, cost, and revenue stability.

[25] "CCM_2024 MO Rate Design Model" tab "Combined Meter Rates."
[26] MAWC's Bi-Annual Lead Service Line Report in WR-2022-0303. May 14, 2024.
[27] "2024 GRC - CCM 0088_Attachment 3."

In addition, I recommend that MAWC track LSLR costs separately from other service costs and collect them through a dedicated, volumetric line item on customer bills. This will enhance both equity and transparency.

V. CONCLUSION

Q Does this conclude your testimony?

A Yes, it does.