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Witness:	*Randall Jennings*
Sponsoring Party:	*MoPSC Staff*
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MISSOURI PUBLIC SERVICE COMMISSION

FINANCIAL AND BUSINESS ANALYSIS DIVISION

FINANCIAL ANALYSIS DEPARTMENT

REBUTTAL TESTIMONY

OF

RANDALL JENNINGS

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2022-0303

Jefferson City, Missouri
January 2023

** Denotes Confidential Information **

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Q. Please state your name and business address.

A. My name is Randall Jennings and my business address is P.O. Box 360, Jefferson City, Missouri 65102.

Q. Who is your employer and what is your present position?

A. I am employed by the Missouri Public Service Commission ("Commission") as a member of Commission Staff ("Staff") and my title is Senior Utility Regulatory Auditor for the Financial Analysis Department, in the Financial and Business Analysis Division.

Q. Are you the same Randall Jennings who filed Direct Testimony in this case on November 22, 2022?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to the direct testimonies of Ann E. Bulkley, James S. Merante, and David Murray. Ms. Bulkley sponsored return on equity ("ROE") and capital structure testimony on behalf of Missouri-American Water Company ("MAWC"). Mr. Merante sponsored overall rate of return ("ROR"), cost of debt, and capital structure testimony on behalf of MAWC. Mr. Murray sponsored ROR, ROE, cost of debt, and capital structure testimony on behalf of the Office of the Public Counsel ("OPC"). Within this testimony, Staff will address issues related to a just and reasonable ROR to be applied to

MAWC's water and sewer utility rate base for ratemaking purposes in this proceeding. Staff's analyses and conclusions are supported by the data presented in Staff's rebuttal workpapers.

I. EXECUTIVE SUMMARY

Q. What is the overview of your response to the direct testimonies of Ms. Bulkley and Mr. Merante?

A. Staff's rebuttal will focus on Ms. Bulkley's proposed ROE and capital structure and Mr. Merante's proposed capital structure.

Ms. Bulkley proposed an ROE of 10.50% within a range of 9.90% to 11.25%[1] and a proposed future capital structure of 50.43% equity and 49.57% long-term debt for the period ending May 31, 2023.[2]

Mr. Merante proposed an ROR of 7.53% based on the cost rates of 4.50% for long-term debt and 10.50% for equity, as well as the proposed future capital structure of 50.43% equity and 49.57% long-term debt for the period ending May 31, 2023.[3]

During the audit review process, Staff discerned that Ms. Bulkley introduced a series of biased estimates for her cost of equity ("COE") to recommend an overstated ROE[4] and utilized an inappropriate capital structure. First, Ms. Bulkley used an improper proxy group, consisting of utility companies supplying water, natural gas, and electricity for estimation of her COE. Staff's analysis concluded that including natural gas and electric utility companies in the proxy group resulted in a significant upward bias in Ms. Bulkley's COE estimation. Second,

[1] Page 79, Lines 7-9, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[2] Page 80, Lines 5-10, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[3] Page 10, Lines 18-20, James S. Merante Direct Testimony, Case No. WR-2022-0303.
[4] Ms. Bulkley incorrectly used the terms ROE and COE interchangeably. As explained in footnote No. 3 of Jennings' Direct Testimony, COE is the return required by investors; ROE is the return set by a regulatory utility commission.

Ms. Bulkley improperly applied COE estimation methods to her proxy group. Ms. Bulkley applied the constant growth form of the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), and the Empirical Capital Asset Pricing Model ("ECAPM") to her proxy group. Staff's analysis found that Ms. Bulkley disregarded some of the results of her own DCF COE estimation results (which range from 7.48% to 10.65%) and excluded one of the proxy companies from her results which produced COE estimates that were unreasonably high, ranging from 8.07% to 11.39%.[5] Using proper cost of capital models with reasonable inputs and including all proxy companies shows that the current COE for water utility companies is not higher than 10%. Third, Ms. Bulkley recommended the use of an inappropriate capital structure. Ms. Bulkley used a pro forma capital structure as discussed by Mr. Merante. Ms. Bulkley argued that a capital structure for MAWC "should be based on the operations and risk factors of MAWC as an independent entity, unrelated to the capital structures of its financing sources."[6] Ms. Bulkley's assertion is unreasonable considering that approximately 97% of MAWC's capital structure depends on American Water Works Company, Inc. ("AWWC").

Q. What is the overview of your response to the testimony of Mr. Murray?

A. Mr. Murray proposed an ROE of 9.00% using AWWC's consolidated capital structure of 40.45% common equity[7] and 59.55% long-term debt and resulting in an after-tax ROR of 6.06%.[8]

[5] Schedule AEB-3, Ann Bulkley Direct Testimony, Case No. WR-2022-0303.
[6] Page 73, Lines 3-5, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[7] Page 47, Lines 13-14, David Murray Direct Testimony, Case No. WR-2022-0303.
[8] Schedule DM-D-14, David Murray Direct Testimony, Case No. WR-2022-0303.

Staff expresses concern with how Mr. Murray derived his proposed authorized ROE from his estimated COE calculations. In his ROE estimation methodology, Mr. Murray appears to suggest that his ROE recommendation is a function of change in COE between rate case periods but offers no discernible and plausible evidence that this is the case. His current COE estimate shows that COE increased by about 50 basis points since MAWC's 2020 rate case but his recommended authorized ROE actually decreased from his 2020 recommendation in spite of the increased change in the COE.

II. RESPONSE TO TESTIMONIES OF MS. BULKLEY AND MR. MERANTE

Q. What are the specific areas in which Staff disagrees with Ms. Bulkley's analysis and conclusions?

A. The areas in which Staff disagrees with Ms. Bulkley include:

- Recommended ROE
- Proxy Group Selection
- COE Analysis
  - DCF
  - CAPM
  - ECAPM
- Capital Structure

I will discuss each in turn, below.

A. RECOMMENDED ROE

Q. What is Ms. Bulkley's proposed ROE for MAWC in this proceeding?

A. Ms. Bulkley proposed an ROE of 10.50%, within a range of 9.90% to 11.25%, for use in this proceeding.[9]

Q. What are Staff's concerns with Ms. Bulkley's proposed ROE?

[9] Page 79, Lines 5-9, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.

A. Staff's concern is that Ms. Bulkley's proposed ROE of 10.50% is too high compared to the national average authorized ROE of 9.59% in water utility rate cases completed in the first nine months of 2022.[10] As Ms. Bulkley recognized, an authorized ROE significantly below authorized ROEs for other water utilities can inhibit a utility's ability to attract capital for investment.[11] The opposite is also true: an authorized ROE significantly higher than authorized ROEs for other water utilities, while perhaps conferring an advantage in the attraction of capital, is unfair to the ratepayers and inherently unjust and unreasonable.

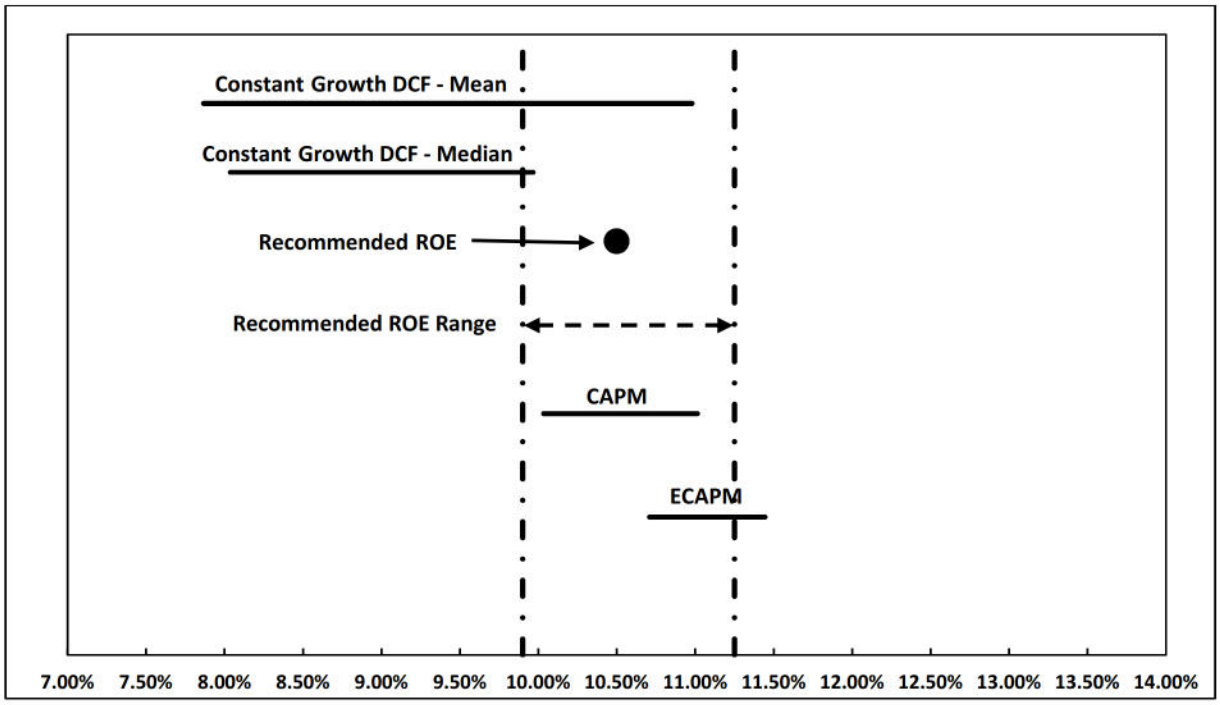
Ms. Bulkley also stated that "[a]ll utility operating subsidiaries within [AWWC] corporate structure compete for discretionary capital,"[12] and unless MAWC is provided a reasonable opportunity to earn a market-based ROE with an appropriate capital structure, it will be at a disadvantage in attracting discretionary capital from parent company resources. Staff requested a list of discretionary capital transfers from AWWC to MAWC and as a percentage of total discretionary capital transfers to all AWWC subsidiaries. Ms. Bulkley responded stating, "Discretionary capital investment is defined by MAWC as spending that is considered proactive investments of assets that could be delayed to a later period. MAWC does not track 'transfers' of discretionary capital from AWWC to MAWC, or in the aggregate."[13] Staff believes MAWC does not "compete for discretionary capital" if there are no records evidencing such transfers take place between AWWC and its subsidiaries.

Q. How did Ms. Bulkley determine her proposed ROE?

[10] S&P Capital IQ Pro, Retrieved on November 18, 2022.
[11] Page 11, Lines 10-12, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[12] Page 11, Lines 19-20, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[13] Staff Data Request No. 0270.

A. Ms. Bulkley determined her proposed ROE from a range of the results of her COE estimates. Ms. Bulkley's COE estimates for each analysis method are summarized in Figure 1 below. Based on this, it is unclear how Ms. Bulkley determined her "reasonable" range of ROE estimates or her proposed ROE within that range.[14]

Figure 1. Ms. Bulkley's COE Estimates[15]



Q. How did Ms. Bulkley estimate her COE?

A. Ms. Bulkley applied the constant-growth DCF, CAPM, and ECAPM estimation methodologies to a proxy group composed of water, natural gas, and electric companies.

B. PROXY GROUP SELECTION

Q. What is Ms. Bulkley's proxy group for estimating MAWC's COE?

[14] Page 7, Line 13 through Page 8, Line 1, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[15] Page 7, Figure 1, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.

A. Ms. Bulkley selected six water utilities, six natural gas distribution companies, and one electric company classified by Value Line as water, natural gas, and electric utilities,[16] respectively, for her proxy group for estimating MAWC's COE. These are listed in Table 1 below.

Table 1. Ms. Bulkley's Proxy Group

Natural Gas and Electric Utilities Name	Symbol	Credit Rating[17]	Average Beta[18]
Atmos Energy Corporation	ATO	A -	0.80
Eversource Energy	ES	A -	0.90
NiSource Inc.	NI	BBB +	0.85
New Jersey Resources Corporation	NJR	A +	0.96
Northwest Natural Gas Company	NWN	A +	0.81
ONE Gas, Inc.	OGS	BBB +	0.80
Spire, Inc.	SR	A -	0.84
Natural Gas and Electric Utilities Average		**A -**	**0.85**
Water Utilities Name			
American States Water Company	AWR	A +	0.65
California Water Service Group	CWT	A +	0.68
Essential Utilities, Inc.	WTRG	A	0.95
Middlesex Water Company	MSEX	A	0.71
SJW Group	SJW	A -	0.81
York Water Company	YORW	A -	0.81
Water Utilities Average		**A**	**0.77**

Q. What is Staff's concern with Ms. Bulkley's proxy group?

A. Staff's concern is that Ms. Bulkley's proxy group includes natural gas distribution and electric companies. Staff found that the natural gas distribution and electric companies are not comparable to water utilities to be reasonably included in a proxy group used

[16] The Value Line Investment Survey: Ratings & Reports.
[17] Schedule AEB-2, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[18] Value Line and Jennings Workpaper, Jennings' Rebuttal Testimony.

to estimate the COE for a water utility. Because natural gas distribution and electric companies are included in Ms. Bulkley's COE estimates, her estimations are overstated.

Q. Why are natural gas distribution and electric companies not comparable to water utilities?

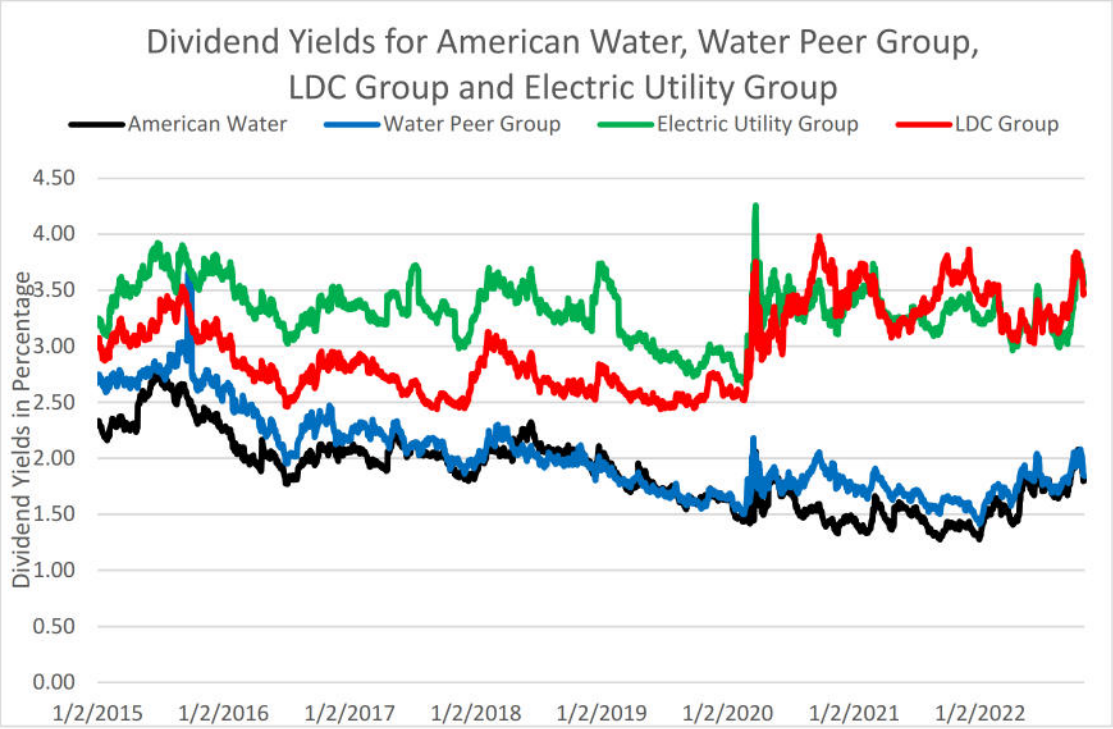
A. As displayed in Table 1 above, the average beta for Ms. Bulkley's natural gas distribution and electric utility proxy companies is higher than that of her proxy water utility companies.[19] In addition, the average credit rating for the natural gas distribution and electric utility proxy companies is lower than the average credit rating for her proxy water utility companies. Both of these items (credit rating and beta) indicate that the gas/electric proxy group is more risky than the water utility proxy group. For example, the group of water utility companies have an average credit rating and beta of A and 0.77, whereas the group of natural gas and electric utility companies have an average credit rating and beta of A- and 0.85. Therefore, Ms. Bulkley's inclusion of gas and electric companies with lower credit ratings and higher betas, which indicate that they are riskier companies and/or industries requiring higher returns, causes her COE estimation results to be upwardly biased.

The natural gas and electric utility industries also appear to be completely different from the water utility industry when comparing dividend yields. As shown in Figure 2 below, Mr. Murray compared the dividend yields from 2015 through 2022 for groups of utility companies based on the utility type in order to display the variable dividend spread between the industries. Based on Mr. Murray's graph, natural gas (Local Distribution Company, "LDC") and electric utilities have consistently had higher dividend yields compared to the water utility industry. The difference in yields expanded in 2020 and has continued through 2022.

[19] A higher beta means a higher risk and requires a higher return.

Water utilities' lower dividend yields, all other things remaining equal, results in lower COE estimates compared to the natural gas and electric utility industries.

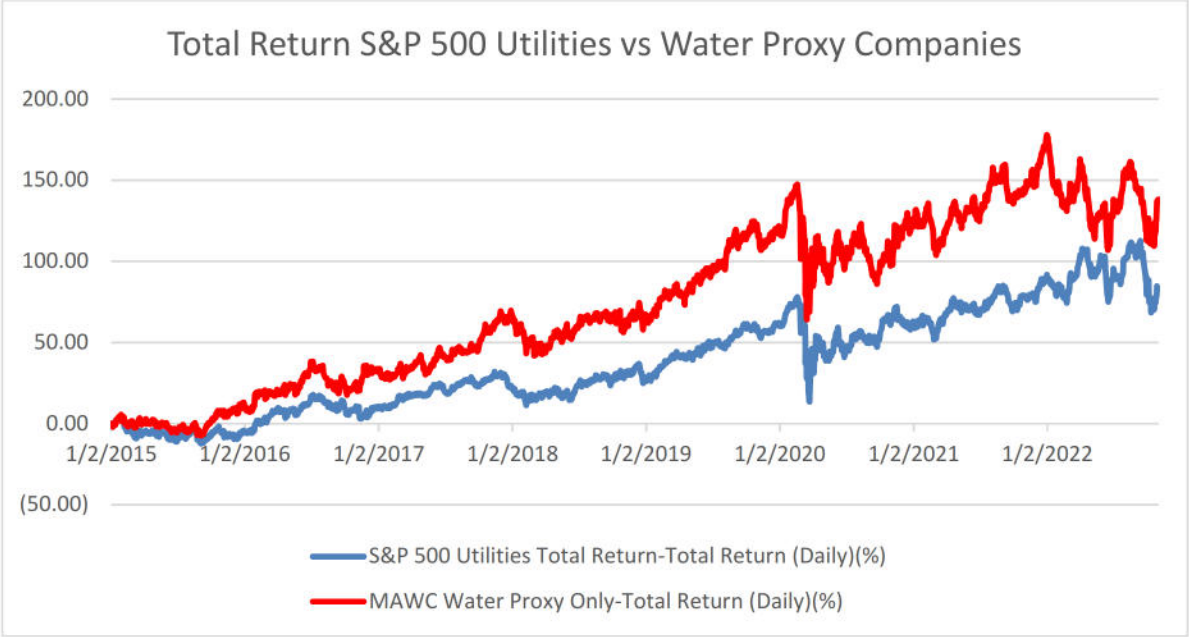
Figure 2. Mr. Murray's Dividend Yields[20]



Also, when looking at the total return of the S&P 500 Utilities, which is made up primarily of gas and electric utilities, and the water utility proxy companies selected by Ms. Bulkley, there is an obvious difference as displayed in Figure 3 below. This figure also illustrates that from 2016 through 2022, the total return of S&P 500 Utilities was consistently lower than that of Ms. Bulkley's water utility proxy companies.

[20] Page 16, Line 1, David Murray Direct Testimony, Case No. WR-2022-0303.

Figure 3. Total Return[21]



Q. Did Staff find evidence of upward bias in Ms. Bulkley's COE estimates because she included natural gas and electricity companies in her proxy group selection?

A. Yes. Staff analyzed the results of Ms. Bulkley's water and gas/electric utility COE estimates, which show that including natural gas and electricity companies in the proxy group created an upward bias in COE estimates, regardless of the methodology. Table 2 below presents Ms. Bulkley's COE estimates for water and gas/electric utilities in her proxy group listed in Table 1:

[21] RTJ Total Return Data, Jennings Workpaper, Jennings' Rebuttal Testimony.

Table 2. Average COE Comparison between Water and Natural Gas / Electric

	Water	Natural Gas / Electric	Basis Points Difference
Constant Growth DCF [22]			
30-Day Average	8.56%	9.39%	83
90-Day Average	8.51%	9.57%	106
180-Day Average	8.49%	9.74%	125
Constant Growth Average	8.52%	9.57%	105
CAPM - Value Line Beta[23]			
30-day Average Treasury Bond Yield	10.40%	11.31%	91
Near-Term Blue Chip Forecast Yield	10.54%	11.39%	85
Long-Term Blue Chip Forecast Yield	10.56%	11.40%	84
CAPM - Bloomberg Beta[24]			
30-day Average Treasury Bond Yield	10.51%	10.55%	4
Near-Term Blue Chip Forecast Yield	10.65%	10.69%	4
Long-Term Blue Chip Forecast Yield	10.66%	10.70%	4
ECAPM - Value Line Beta[25]			
30-day Average Treasury Bond Yield	10.98%	11.66%	68
Near-Term Blue Chip Forecast Yield	11.09%	11.73%	64
Long-Term Blue Chip Forecast Yield	11.10%	11.74%	64
ECAPM - Bloomberg Beta[26]			
30-day Average Treasury Bond Yield	11.06%	11.10%	4
Near-Term Blue Chip Forecast Yield	11.17%	11.20%	3
Long-Term Blue Chip Forecast Yield	11.18%	11.21%	3

As seen in Table 2, all COE estimation methodologies utilized by Ms. Bulkley produce average COE estimates for natural gas and electric utilities that are consistently higher than the average COE estimates for water utilities using the same methodologies.

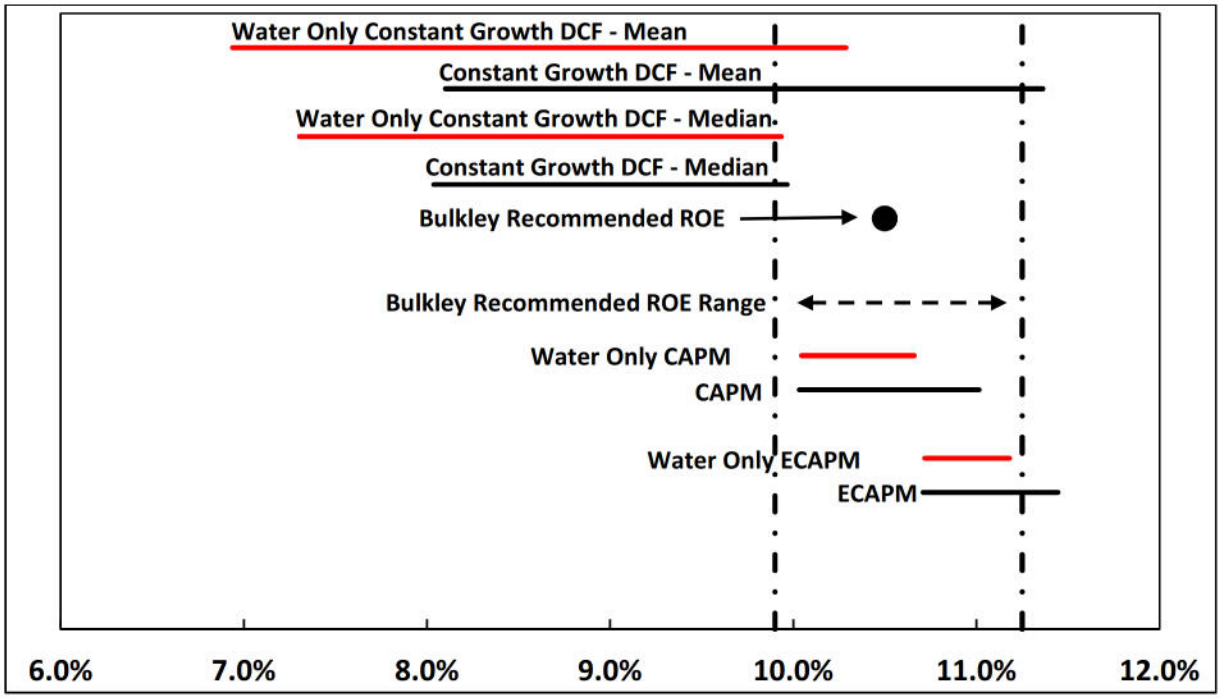
Q. How does Ms. Bulkley's COE estimates compare to COE estimates using only water utility companies?

A. Figure 4 displays a graphic comparison of Ms. Bulkley's COE original range of estimates (including natural gas and electric utilities) and what her ranges of estimates would

[22] AEB-3 Constant DCF, Jennings Workpaper, Jennings' Rebuttal Testimony.
[23] AEB-4 – CAPM, Jennings Workpaper, Jennings' Rebuttal Testimony.
[24] Ibid.
[25] Ibid.
[26] Ibid.

be if she only used water utility companies in her proxy group. Removing the upward bias of natural gas and electric utilities from the analysis, results in consistently lower ranges of COE estimates, regardless of the measurement method.

Figure 4. COE Comparison of Ms. Bulkley's Proxy Group & Water Utilities Only[27]



C. DCF

Q. What is Staff's concern with Ms. Bulkley's constant-growth DCF model?

A. Ms. Bulkley used only short-term analysts' projected earnings growth rates from Value Line, Zacks Finance, and Yahoo! Finance for growth rates in her constant-growth DCF model.[28] Ms. Bulkley incorrectly labeled these growth rates as "long-term" when, in fact, Value Line lists the rates of growth as being estimated for a short-term. For example, Value Line lists a six year span from "19-21 to 25-27," which is short-term.[29] Ms. Bulkley used a

[27] AEB-1 – Summary, Jennings Workpaper, Jennings' Rebuttal Testimony.
[28] Page 46, Lines 9-13, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[29] Value Line, https://investors.valueline.com/.

constant-growth model based on the theory that the short-term growth rates listed in her workpapers will continue in perpetuity.[30] Ms. Bulkley's unreasonable expectation that these high growth rates will continue indefinitely overstated her COE estimates.

Q. What is wrong with using only analysts' short-term earnings growth rates?

A. Analysts' short-term earnings growth rates are not suitable for use in the constant-growth DCF model. The DCF model uses the selected growth rate and anticipates that growth will be maintained at that level for infinity. By using these analysts' projected short-term growth rates in the constant-growth DCF, Ms. Bulkley makes an unreasonable assumption that water utilities will grow at these often high and precarious short-term growth rates indefinitely. For example, Ms. Bulkley used an average growth rate of 9.85% for calculating the DCF COE estimate of SJW Group, one of her proxy water utilities, and it is unreasonable to assume that a 9.85% growth rate is sustainable for an infinite time-period. Analysts are of the consensus that long-term growth rates for utilities will eventually converge to the level of long-term gross domestic product ("GDP").[31] Staff has consistently held the view that while a company or industry could grow at a rate faster than GDP in the short to medium term, no company or industry may do so in perpetuity. Currently, the real GDP is projected to grow at a long-term rate of 1.90% over the next decade.[32] Ms. Bulkley's analysis using the short-term projected earnings growth rates led her to calculate a mean DCF COE of 9.64% that is too high and unrealistic.

Q. What else concerns Staff about Ms. Bulkley's DCF COE estimates?

[30] AEB-3 Constant DCF, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303
[31] Morin, R. A. (2006) New Regulatory Finance. Public Utilities Reports. page 302.
[32] Congressional Budget Office, The 2022 Long-Term Budget Outlook, Figure B-1, page 40, https://www.cbo.gov/system/files/2022-07/57971-LTBO.pdf.

A. Even though Ms. Bulkley's authorized ROE estimation methodology assumes ROE is equal to COE,[33] her recommended authorized ROE does not reflect all of the results of her DCF COE estimation (see Figure 1 above). Ms. Bulkley's recommended authorized ROE range is 9.90% to 11.25%, yet her DCF COE results range from 7.94% to 11.39%.[34] It is unreasonable to exclude a series of results (196 basis points) less than her selected range and not exclude an equally proportionate set of results (14 basis points) higher than her selected range. Further, Ms. Bulkley omits one of her proxy companies (Middlesex Water Company) from her DCF analyses, further biasing her results. Including Middlesex Water Company in Ms. Bulkley's DCF COE analyses would alter her DCF COE results to a range of 7.48% to 10.65%, lowering her range of results by approximately 50 additional basis points.

Q. What would Ms. Bulkley's DCF COE results be if they were based on water utility proxy companies only?

A. After including Middlesex Water Company, removing the upward bias of the natural gas distribution and electric proxy companies, and using only her average growth rate for each water utility proxy company, Ms. Bulkley's results change from a range of 8.07% to 11.39% to a range of 8.49% to 8.56%; this is a difference in range of results of over three hundred basis points.[35]

D. <u>CAPM</u>

Q. What is Staff's concern with Ms. Bulkley's CAPM estimates?

A. Ms. Bulkley used unreasonably high market risk premiums ("MRPs") to calculate her CAPM estimates. Ms. Bulkley's MRPs of between 9.34% and 10.02% are 3.34%

[33] Page 3, Line 23 and Page 4, Line 1, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[34] Schedule AEB-1, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[35] AEB-3 Constant DCF, Jennings Workpaper, Jennings' Rebuttal Testimony.

to 5.52% higher than the industry's estimates, which range from 4.50% to 6.00%.[36] Ms. Bulkley's MRPs assume that United States capital markets will achieve nominal returns of 12.74% per year, forever.[37] This is unrealistic given that historical data shows that from 1963 through 2021, the geometric mean total returns for large United States stocks have been approximately 10.81%.[38] It is even more unrealistic to expect nominal returns of 12.74% given that ongoing economic growth is not expected to be higher than 4.00% in 2023.[39] In July of 2022, the Congressional Budget Office projected a nominal GDP growth rate of 4.40% over the next ten years.[40] It is irrational to expect near future returns to return to Ms. Bulkley's expected levels, given the current conditions of slower economic growth.

Q. How did Ms. Bulkley calculate the market return of 12.74% within her CAPM estimates?

A. Ms. Bulkley calculated the total return estimate for the market of 12.74% using an estimated weighted average dividend yield for the S&P 500 of 1.73%, adjusted by multiplying by 0.5 plus a growth rate for the S&P 500 of 10.92%.[41]

Q. What are other financial institutions' current MRP estimates?

[36] For instance, the American Appraisal Risk Premium Quarterly, Value Line, Duff & Phelps, and Geometric Mean of Duff & Phelps calculated forward-looking risk premiums of 6.0%, 5.5%, 5.0% and 4.5%, respectively. According to 2022 survey research, the average of MRP estimates for the U.S. is 5.60%. FERC Opinion No. 569, 169 FERC ¶ 61,129 and Statista, Published July4, 2022 and retrieved December 20, 2022; https://www.statista.com/statistics/664840/average-market-risk-premium-usa/#:~:text=The%20average%20market%20risk%20premium%20in%20the%20United,hovered%20between%205.3%20and%205.7%20percent%20since%202011.

[37] MRP = U.S capital market returns 30-year government bond yields.

[38] Jennings' MRP SBBI Workpaper, Direct Testimony.

[39] US Stocks are Forecast to Have Less Pain but No Gain in 2023; https://www.goldmansachs.com/insights/pages/us-stocks-are-forecast-to-have-less-pain-but-no-gain-in-2023.html

[40] Congressional Budget Office, The 2022 Long-Term Budget Outlook, Figure B-1, page 40, https://www.cbo.gopv/system/files/2022-07/57971-LTBO.pdf.

[41] AEB-5 – Market Return, Jennings Workpaper, Jennings' Rebuttal Testimony.

A. Typical historical MRPs are between 4.61% for the geometric mean and 6.03% for the arithmetic mean.[42] There is a wide variety of MRP estimates. For instance, the American Appraisal Risk Premium Quarterly, Value Line, Duff & Phelps, and Geometric Mean of Duff & Phelps calculated MRPs of 6.0%, 5.5%, 5.0% and 4.5%, respectively.[43] According to 2022 survey research, the average MRP estimates for the U.S. is 5.6%.[44]

Figure 5. MRP and corresponding COE

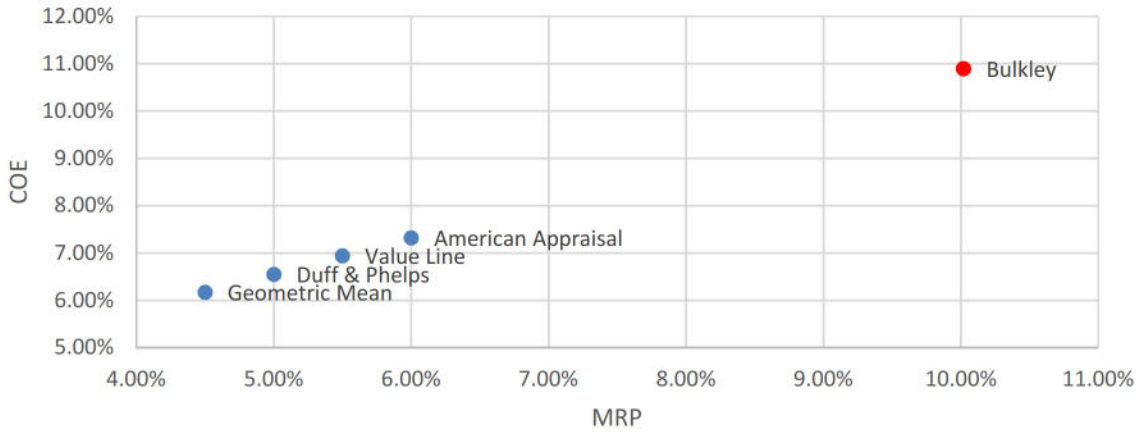


Figure 5 above is a comparison of MRP estimates with corresponding COE estimates for the water utilities contained in Ms. Bulkley's proxy group under a scenario assuming a current 30-day average of 30-year U.S. Treasury bond yield of 2.72%, as Ms. Bulkley did in her direct testimony. In Figure 5, Ms. Bulkley's MRP and COE results are outliers, compared to the other estimates. This clearly indicates that Ms. Bulkley's MRPs are too high and, consequently, her COE estimates are too high as well.

[42] Jennings' MRP SBBI Workpaper.

[43] FERC Opinion No. 569, 169 FERC ¶ 61,129.

[44] Statista, Published July4, 2022 and retrieved December 20, 2022; https://www.statista.com/statistics/664840/average-market-risk-premium-usa/#:~:text=The%20average%20market%20risk%20premium%20in%20the%20United,hovered%20between%205.3%20and%205.7%20percent%20since%202011.

Q. What is the other reason Ms. Bulkley's CAPM COE estimates are overstated?

A. Ms. Bulkley used inflated projected risk-free rates that bear no relationship to the current cost of capital. Ms. Bulkley used not only the current 30-day average of 30-year U.S. Treasury bond yield of 2.72%, but she also used two inflated projected risk-free rates, the near-term projected 30-year U.S. Treasury bond yield (Q3 2022 through Q3 2023) of 3.34% and the projected 30-year U.S. Treasury bond yield (2023 through 2027) of 3.40%.[45] Staff has consistently refuted the notion that investors use a projected interest rate to estimate the COE, because current interest rates already consider expectations of future interest rates. It is therefore illogical to use projected bond yields in the estimation of COE.

Q. Why is it illogical to use projected interest rates to estimate the COE?

A. An investor would not buy a 30-year Treasury bond at yields of approximately 2.72% if the investor thought 30-year Treasury bonds would trade at yields-to-maturity of 3.34% and 3.40% in the near future, the risk-free rates Ms. Bulkley uses in her CAPM analyses.[46] Ms. Bulkley's fallacy of using projected interest rates in her CAPM analysis is similar to her error of using projected input variables in her expected earnings analysis. Both current bond prices and stock prices already reflect investors' expectations of future interest rates. Use of projected rates in the CAPM COE estimation leads to double counting and overestimation of COE. If investors believed that they could achieve higher yields in the future, they would not buy long-term bonds today because they would experience a capital loss when interest rates increase. For example, if an investor purchased a newly issued $1,000, 30-year U.S. Treasury bond today at a coupon rate of 2.72%, the investor would receive semiannual

[45] Schedule AEB-4, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[46] Ibid.

coupon payments of $13.60 for the next 30 years and a return of the $1,000 investment at maturity. If these payments are discounted at the current required rate of 2.72%, the present value of this stream of payments is exactly equal to the $1,000 initial investment. However, if investors expected the 30-year Treasury bond rate to increase to 3.40%, as Ms. Bulkley suggests in her CAPM analysis, the investor that purchased the 2.72% bond today would see the value of their $1,000 bond investment decline to $767.48 next year. While it is possible that some investors may have a preference for short long-term treasury bonds even if they expect interest rates to increase by this much, it is obvious that the consensus of investors would be to not invest. Ms. Bulkley's projected rates violate the basic tenets of financial investment principles.

Q. What would Ms. Bulkley's CAPM COE estimates be if she had used proper input data?

A. With reasonable assumptions such as using only water utility proxy companies, a market return of 9.43%, and a risk-free rate of 3.04,[47] Ms. Bulkley's range of CAPM COE estimates would be between 7.72% and 8.01%. This overlaps with Staff's COE estimates, which are much lower than Ms. Bulkley's CAPM COE estimates of 10.03% to 11.01%.[48]

Q. What is your concern with Ms. Bulkley's ECAPM model?

A. Ms. Bulkley's ECAPM COE estimates of 10.71% to 11.44% have all of the same issues as her CAPM COE estimation,[49] plus an additional concern regarding her adjustment to account for the supposed tendency of the CAPM method to underestimate COE for companies with low beta coefficients.

[47] Three month average 30 year treasury yield for April, May, & June 2022 [(2.81 + 3.07 + 3.25) / 3 = 3.04].
[48] Page 54, Line 20, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[49] Page 54, Line 21, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.

Q. How did Ms. Bulkley adjust her CAPM COE?

A. Ms. Bulkley multiplied 75% of her MRPs by the beta coefficient and added the remaining 25% MRPs.[50] This adjustment is consistent with Dr. Roger Morin's formula. Dr. Morin's formula was developed on his finding, based upon data collected between 1926 and 1984, that regular CAPM underestimated returns by about 2.00%.[51] However, there is no evidence Dr. Morin's finding would hold with data collected after 1984. Furthermore, Dr. Morin also cited other studies that found that CAPM produced returns between -9.61% and 13.56%, meaning that CAPM actually overestimated COE in some instances.[52] Such variations in findings do not lend credibility to Ms. Bulkley's use of the ECAPM.

Q. What would Ms. Bulkley's ECAPM COE estimates be with proper input data?

A. With the same reasonable assumptions of using only water utility proxy companies, a market return of 9.43% and a risk-free rate of 3.04%, the range of ECAPM COE estimates for Ms. Bulkley's water utility proxy group would be 8.15% to 8.37%.[53] These results are much lower than Ms. Bulkley's ECAPM COE estimates of 10.71% to 11.44%.[54] Ms. Bulkley's ECAPM, just like her CAPM, overstates her proposed COE.

E. THE CAPITAL STRUCTURE OF MAWC

Q. What capital structure did MAWC's witnesses propose in this proceeding?

A. MAWC's witnesses developed and proposed an MAWC pro forma capital structure composed of 50.43% common equity and 49.57% long-term debt expected at

[50] Original CAPM COE estimate equals Risk-Free Rate + (beta × MRP) but ECAPM COE estimate equals Risk-Free Rate + (0.25 × MRP) + (0.75 × beta × MRP).
[51] Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports. page 190.
[52] Ibid.
[53] AEB-4 – CAPM, Jennings Workpaper, Jennings' Rebuttal Testimony.
[54] Page 54, Line 21, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.

test year-end, December 31, 2022, as adjusted through May 31, 2023.[55] MAWC's witnesses are not recommending use of AWWC's consolidated capital structure to set MAWC's rates in this proceeding.

Q. What is Staff's concerns with the capital structure proposed by MAWC's witnesses?

A. Staff's concern with the capital structure proposed by Mr. Merante and Ms. Bulkley is that the capital structure does not reflect MAWC's actual financial risk profile.

Q. What are Ms. Bulkley's arguments for using MAWC's pro forma capital structure?

A. Ms. Bulkley argues that the pro forma capital structure is reflective of the way the company is operated, and that it represents the financing of MAWC's rate base assets and operating costs.[56] Ms. Bulkley also argues that the pro forma capital structure is within the established range of the capital structures of the proxy group selected.[57] Ms. Bulkley reasoned that the review of the capital structure of MAWC should be based on the operations and risk factors of MAWC as an independent entity, unrelated to the capital structures of its financing sources.[58] Ms. Bulkley also stated that if the Commission is going to rely on the proxy group of companies to establish an ROE for MAWC, the equity ratio for MAWC, being a measure of the financial risk of the company, should also be similar to the proxy group.[59]

Q. Why is MAWC's capital structure argument unreasonable?

[55] Page 10, Lines 11-13, James S. Merante Direct Testimony, Case No. WR-2022-0303.
[56] Page 72, Lines 12-15, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[57] Page 74, Lines 9-11, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[58] Page 73, Lines 3-5, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.
[59] Page 73, Lines 10-14, Ann E. Bulkley Direct Testimony, Case No. WR-2022-0303.

A. MAWC is not viewed, nor financially managed, as an independent operating company with capital costs based on its stand-alone business risk and financial risk. In fact, MAWC is not publicly rated by any of the rating agencies. MAWC receives almost all of its debt financing from AWWC's financing subsidiary, American Water Capital Corporation ("AWCC").[60] The cost of debt issued by AWCC is based on AWWC's consolidated risk profile, which includes both AWWC's business and financial risk because ** [redacted].** [61] AWWC's financial risks and business risks are the basis for the 'Baa1' and 'A' ratings currently assigned by Moody's and Standard & Poor's,[62] ** [redacted]. ** [63] ** [redacted], **[64] when debt investors are determining the required return on the debt, they evaluate the amount of leverage in AWWC's capital structure, not the capital structure of AWCC or MAWC due to both being one hundred percent owned subsidiaries of AWWC.[65]

Q. What is the most recent debt obtained or issuance that MAWC issued independent of AWWC?

A. The most recent independently obtained debt, outstanding on MAWC's books, is approximately $10 million obtained through the Missouri Department of Natural Resources on March 10, 2022.[66] This equates to less than 3% of MAWC's debt being independently

[60] Staff Data Request Nos. 0052 and 0053.1.
[61] Staff Data Request No. 0040.3.
[62] S&P Capital IQ Pro, retrieved December 20, 2022; https://www.capitaliq.spglobal.com.
[63] Staff Data Request No. 0040.2.
[64] Ibid.
[65] S&P Capital IQ Pro; https://www.capitaliq.spglobal.com.
[66] Staff Data Request No. 0052.

obtained or issued by MAWC. In contrast, over 97% of MAWC's outstanding debt since 2020 has been obtained from AWWC or its affiliates.[67]

Q. What is the implication of MAWC not publicly issuing its own debt?

A. The implication is that MAWC's standalone capital structure does not properly reflect MAWC's real cost of capital for assessing its financial risk and that MAWC does not need to manage its financial risk to appease potential debt investors. Considering that MAWC is a private corporation, wholly owned by AWWC, that over 97% of MAWC's long-term debt since 2020 has been obtained from AWCC, and that ** [redacted] **, it is more proper to use AWWC's consolidated capital structure for MAWC's ratemaking capital structure.

Q. What is MAWC's financing arrangement with AWCC?

A. As stated in Paragraph 13 of MAWC's application filed in Case No. WF-2002-1096:

> Applicant [MAWC] proposes to implement some or the entire long-term debt portion of its financing program primarily through an affiliate, AWCC. AWCC is a wholly-owned subsidiary of AWWC established for the purpose of providing financial services to AWWC and its water and wastewater utility subsidiaries (including Applicant) by pooling the financing requirements of such companies (the "Participants"), thereby creating larger and more cost efficient debt issues at more attractive interest rates and lower transaction costs than would otherwise be available.

Staff understands that the policy outlined above is still in effect for MAWC and AWCC.[68]

[67] Staff Data Request Nos. 0052 and No. 0053.1.
[68] Staff Data Request No. 0301.

Q. How do major credit agencies evaluate the creditworthiness of AWWC and MAWC?

A. S&P and Moody's do not issue a public credit rating for MAWC; they issue a public credit rating on AWWC.[69] The credit analysis performed by S&P for AWWC is based on AWWC's consolidated credit risk profile, which consists primarily of regulated water and sewer subsidiaries, but also includes some non-regulated operations. MAWC has obtained private credit ratings from Moody's and S&P but has chosen to not have the results published publicly.[70] As long as AWWC's risk associated with the consolidated operations is consistent with MAWC's risk and MAWC keeps its credit ratings private, it is appropriate to not only use the consolidated capital structure, but also the cost of capital associated with this capital structure for ratemaking purposes.

Q. What has the Commission decided in the past on the capital structure issue?

A. Each case subsequent to the formation of AWCC has been settled, beginning with Case No. WR-2003-0500, so the Commission has not ruled on the issue of whether MAWC's ratemaking capital structure should be based on MAWC's subsidiary capital structure or AWWC's consolidated capital structure.[71]

Q. What capital structure did Staff recommend for use in this proceeding?

A. Staff recommended the Commission adopt AWWC's consolidated capital structure of 40.71% common equity, 59.28% percent long-term debt, and 0.02% preferred stock, as of June 30, 2022, for purposes of setting MAWC's allowed ROR.[72]

[69] S&P Capital IQ Pro; https://www.capitaliq.spglobal.com.
[70] Staff Data Request No. 0057.
[71] WR-2003-0500, WR-2007-0216, WR-2008-0311, WR-2010-0131, WR-2011-0337, WR-2015-0301, WR-2017-0285, and WR-2020-0344.
[72] Page 27, Line 14 through Page 28, Line 3, Jennings' Direct Testimony.

Q. What is your conclusion about Mr. Merante's proposed pro forma capital structure?

A. Mr. Merante's proposal to use a pro forma capital structure of MAWC with adjustments through May 31, 2023, raises serious questions. As Staff has already stated, the most significant issue of this case from a financial analysis standpoint, is which capital structure properly reflects the ratemaking capital structure and the cost of capital of MAWC. One of the principles set forth in the *Bluefield* and *Hope* cases set an appropriate return for a utility to be that "return that allows the utility to attract capital in the capital market."[73] MAWC does not raise its capital directly from the competitive capital market, but rather through its parent company, AWWC, using the parent company's consolidated financial strength. All of MAWC's equity and most of its long-term debt are actually from AWWC.[74]

III. RESPONSE TO TESTIMONY OF MR. MURRAY

A. ROE

Q. What is Mr. Murray's recommended ROE for use in this proceeding?

A. Mr. Murray recommended that the Commission set MAWC's authorized ROE at 9.00%, in the range of 8.40% to 9.25%, based on his COE estimates calculated using the multi-stage DCF and the CAPM models.

Q. What is your concern with Mr. Murray's recommended ROE?

A. Mr. Murray's recommended ROE of 9.00% is inconsistent with the change in his estimated COE since the most recent MAWC rate case, Case No. WR-2020-0344, during

[73] *Bluefield Waterworks & Improvement Co. v. Public Service Commission of West Virginia,* 262 U.S. 679, 43 S.Ct. 675, 67 L.Ed. 1176 (1923); *Federal Power Commission v. Hope Natural Gas Co.,* 320 U.S. 591, 64 S.Ct. 281, 88 L.Ed. 333 (1944).

[74] Staff's Data Requests No. 0052, No. 0053, and No. 0058.

which Mr. Murray estimated MAWC's COE to be in a range of 5.50% to 6.50%.[75] In the current rate case, Mr. Murray estimates MAWC's COE to be in the range of 6.00% to 6.50%; an increase of 50 basis points.[76] Despite this increase in estimated COE of approximately 50 basis points, Mr. Murray's proposed ROE has decreased from 9.25% in Case No. WR-2020-0344[77] to 9.00% in this case;[78] this is a reduction of 25 basis points.

Q. What authorized ROE did Staff propose for use in this proceeding?

A. Staff proposed an authorized ROE of 9.73% be used to set MAWC's ROR in this proceeding. Staff's recommendation is based on its finding that COE estimates increased by about 46 basis points since the Commission's most recent, fully-litigated rate case, Spire Missouri's natural gas rate case, Case No. GR-2021-0108, in 2021 ("2021 Spire Case")[79] and that, at the time of the 2021 Spire Case, there was an approximate 10 basis point difference between authorized water utility ROEs and natural gas ROEs.[80]

Q. Do you agree with Mr. Murray's statement that despite recent increases in long-term corporate and United States Treasury bond yields (i.e. long-term interest rates) the water industry's COE has remained fairly stable since MAWC's 2020 rate case (Case No. WR-2020-0344)? [81]

A. No, I do not. When asked to elaborate why this statement is true, Mr. Murray indicated he relied primarily on his multi-stage DCF analysis, which indicates the water utility

[75] Page 9, Line 13, David Murray Direct Testimony, Case No. WR-2022-0303.
[76] Page 5, Line 2, David Murray Direct Testimony, Case No. WR-2022-0303.
[77] Page 9, Line 10, David Murray Direct Testimony, Case No. WR-2022-0303.
[78] Page 2, Line 6, David Murray Direct Testimony, Case No. WR-2022-0303.
[79] In the most recent Spire Missouri general rate case, Case No. GR-2021-0108, the Commission set the authorized ROE at 9.37% for ratemaking purposes.
[80] Schedule ROE RJ-d15, Jennings' Direct Testimony.
[81] Page 2, Lines 11-14, David Murray Direct Testimony, Case No. WR-2022-0303.

industry's COE is about 10 basis points lower in the 2022 rate case than the 2020 rate case.[82] Mr. Murray also stated that his DCF analysis also showed AWWC's COE increased by 20 basis points over the 2020 rate case.[83] As discussed earlier, Mr. Murray indicates that MAWC's COE has increased by approximately 50 basis points, indicating the water industry's COE has not remained stable since the 2020 rate case.

Q. Do you agree with Mr. Murray's suggestion that the Commission use an allowed ROE of 9.40% as the starting point for its reasonableness standard?[84]

A. No, I do not. Mr. Murray does not clearly state how he determined his starting point for the Commission's reasonableness standard.

Q. Do you agree with Mr. Murray's recommended authorized ROE range of 8.40% to 9.25%?[85]

A. No, I do not. After Mr. Murray determined that 9.40% should be the starting point for the Commission's reasonableness standard, he subtracted 100 basis points from that starting point to form the basis for the low-end of his recommended range.[86] It is unclear to Staff how Mr. Murray determined that amount of subtraction.

Also, it is unclear to staff why Mr. Murray's starting point for the Commission's reasonableness standard of 9.40% is not within his own "zone of reasonableness" of 8.40% to 9.25%.[87]

[82] Staff Data Request No. 0279.
[83] Ibid.
[84] Page 5, Lines 19-20, David Murray Direct Testimony, Case No. WR-2022-0303.
[85] Page 5, Line 10, David Murray Direct Testimony, Case No. WR-2022-0303.
[86] Page 5, Lines 20-22, David Murray Direct Testimony, Case No. WR-2022-0303.
[87] Page 5, Lines 10-11, David Murray Direct Testimony, Case No. WR-2022-0303.

Given the lack of clarity in Mr. Murray's starting point, the lack of specificity as to how the amount of his subtraction was calculated, and the fact that his starting point is not included within his "zone of reasonableness," Staff does not agree with Mr. Murray's recommended range of authorized ROE.

Q. Do you agree with Mr. Murray that if commissions believe authorized ROEs reflect the COE of various utility sub-sectors, then they are awarding higher ROEs to the wrong subsector of the utility industry?[88]

A. No, I do not. Mr. Murray did not provide proper evidence in support of this statement and did not show a direct correlation between recently authorized ROEs and current COEs. It is Staff's position that COEs at a point in time do not necessarily determine the authorized ROE directly at that time. Rather, it is the comparison of COEs from two time periods that determines the amount of change in ROE from one time period to the next. In my direct testimony, the COE for Staff's proxy group in 2021 Q1 was compared to the COE of the same proxy group in 2022 Q2 to determine the amount of change in COE from the most recent Commission authorized ROE (2021 Spire Case). That amount of change was then added to the 2021 Spire Case authorized ROE as the COE had increased from 2021 Q1.

Q. How does Mr. Murray justify his recommended authorized ROE of 9.00%?

A. For his recommended authorized ROE, Mr. Murray stated that he used a multi-stage DCF approach, a CAPM analysis and a Rule of Thumb check for reasonableness. Mr. Murray stated that his multi-stage DCF models and CAPM COE estimated averages ranged from 6.09% to 6.35,[89] and 7.53% to 8.46%,[90] respectively.

[88] Page 5, Lines 15-17, David Murray Direct Testimony, Case No. WR-2022-0303.
[89] Page 30, Line 22 through Page 31, Line 4, David Murray Direct Testimony, Case No. WR-2022-0303.
[90] Page 37, Line 3, David Murray Direct Testimony, Case No. WR-2022-0303.

Mr. Murray cited the Chartered Financial Analyst ("CFA") Program curriculum for his Rule of Thumb check and stated it "provides a fairly simple but objective cost of equity."[91] Mr. Murray added a 3% premium to the Yield to Maturity ("YTM") on American Water's publicly-traded bonds resulting in a COE of 8.75% to 9.00%.[92]

After establishing three separate but different COE ranges using the three methods, Mr. Murray does not present in his direct testimony a clear explanation of how these ranges of COE ultimately translate into his proposed ROE of 9.00%.

Q. Why is Mr. Murray's recommended ROE of 9.00% too low?

A. First, as Staff has outlined above, there has been an increase in the average COE since the Commission's most recent authorized ROE and a result, Staff believes there would be an equivalent increase in ROE compared to the Commission's most recent authorized ROE; not a decrease.

Second, Mr. Murray identified the national average authorized ROE for each subsector of the utility industry during the first nine months of 2022, stating that from January to September of 2022 the average authorized ROE for water utilities has been 9.59% and that during the same time frame, electric and natural gas utilities have averaged authorized ROEs of 9.37% and 9.42% respectively.[93] After identifying the average authorized ROE for water utilities during the first nine months of 2022, Mr. Murray insists that his "zone of reasonableness" should be a range of ROEs 34 to 119 basis points lower.

Given these facts and Staff's analysis combined with Mr. Murray's own statements, his recommended ROE of 9.00% is too low.

[91] Page 37, Lines 19-21, David Murray Direct Testimony, Case No. WR-2022-0303.
[92] Page 38, Lines 2-3, David Murray Direct Testimony, Case No. WR-2022-0303.
[93] Page 5, Lines 12-15, David Murray Direct Testimony, Case No. WR-2022-0303.

B. CAPITAL STRUCTURE

Q. What is Mr. Murray's recommended capital structure for use in this proceeding?

A. Mr. Murray proposes using AWWC's actual capital structure ratios in recent years consisting of 40.45% common equity and 59.55% long-term debt.[94] However, if the Commission authorizes a less leveraged capital structure (i.e. more equity than debt), per MAWC's internally managed capital structure, Mr. Murray proposes an authorized ROE of 8.4%.[95] Mr. Murray's proposed capital structure is similar to Staff's recommended capital structure. The slight variance appears to be Mr. Murray's inclusion of current maturities on long-term debt and the inclusion of redeemable preferred stock.[96] This difference amounts to 26 basis points in common equity and 27 basis points in long-term debt. Staff also included the percentage of AWWC's preferred stock (0.02%) into its calculations. Staff will monitor the capital structure of AWWC through the true-up period (December 31, 2022) and will update its calculations as needed at that time.

IV. SUMMARY AND CONCLUSIONS

Q. Please summarize the conclusions of your rebuttal testimony.

A. Ms. Bulkley's proposed ROE of 10.5% for MAWC is not just and reasonable considering her misplaced reliance on certain ROE calculation methodologies and use of certain inappropriate inputs into those methods. Staff proposes that the reasonable authorized ROE to use in this proceeding is 9.73%, in a reasonable range of 9.48% to 9.98%. Staff expresses concern that OPC witness Mr. Murray's proposed authorized ROE of 9.00% falls short of the

[94] Page 40, Lines 6-10, David Murray Direct Testimony, Case No. WR-2022-0303.
[95] Page 6, Lines 4-7, David Murray Direct Testimony, Case No. WR-2022-0303.
[96] Schedule 11, David Murray Direct Testimony, Case No. WR-2022-0303.

reasonable ROE level of around 9.73%, given that capital market evidence does not support reducing authorized ROE from the last Commission's authorized rate case in 2021 by about 37 basis points, as implied in Mr. Murray's recommendation.

Given that MAWC's capital structure is financed and managed almost entirely by AWWC, Staff recommends that the appropriate capital structure to use, to set MAWC's allowed ROR of 6.38% in this proceeding, is AWWC's consolidated capital structure as of June 30, 2022. Staff will keep monitoring AWWC's updated consolidated capital structure and cost of debt through the true-up period and will make its final recommendation at that time.

Q. Does this conclude your rebuttal testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Missouri-American Water Company's Request for Authority to Implement General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas	)))))	Case No. WR-2022-0303

AFFIDAVIT OF RANDALL T. JENNINGS

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW RANDALL T. JENNINGS and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of Randall T. Jennings*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

RANDALL T JENNINGS

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 13th day of January 2023.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070

Notary Public