Exhibit No.:	
Issue(s):	Rate of Return (ROR)/ Capital Structure
Witness/Type of Exhibit:	Murray/Direct
Sponsoring Party:	Public Counsel
Case No.:	WR-2023-0006

DIRECT TESTIMONY

OF

DAVID MURRAY

Submitted on Behalf of the Office of the Public Counsel

CONFLUENCE RIVERS UTILITY OPERATING COMPANY, INC.

CASE NO. WR-2023-0006

** **

Denotes Confidential Information that has been redacted

May 26, 2023

PUBLIC

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DIRECT TESTIMONY

OF

DAVID MURRAY

CONFLUENCE RIVERS UTILITY OPERATING COMPANY, INC.

FILE NO. WR-2023-0006

Q. Please state your name and business address.

A. My name is David Murray and my business address is P.O. Box 2230, Jefferson City, Missouri 65102.

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

A. I am employed by the Missouri Office of the Public Counsel ("OPC") as a Utility Regulatory Manager.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of the OPC.

Q. What it the purpose of your testimony?

A. To recommend a fair and reasonable rate of return ("ROR") for purposes of setting Confluence River Utility Operating Company Inc.'s ("Confluence") revenue requirement.

Q. What experience, knowledge and education qualify you to sponsor ROR testimony in this case?

A. Please see the attached Schedule DM-D-1 for my qualifications as well as a summary of the cases in which I have sponsored testimony on ROR and other financial issues.

Q. What aspects of ROR will you address?

A. I will address a fair and reasonable allowed return on common equity ("ROE"), cost of debt and capital structure.

Q. Can you provide a brief summary of your recommendation?

A. Yes. Confluence's authorized ROE should be set at 9.65% based on a range of 9.1% to 9.9%. This is a reasonable authorized ROE because it recognizes that, in general, the water and sewer utility industry has a lower cost of capital than the electric and local natural gas distribution utility industries (the Commission authorized Spire Missouri a 9.37% ROE in Case No. GR-2021-0108 and The Empire District Electric Company a 9.25% ROE in Case No. ER-2019-0374), but also recognizes that Confluence's stand-alone risk profile is likely higher than that of Missouri American Water Company ("MAWC"), for which I just recommended a 9% authorized ROE in Case No. WR-2022-0303.

I recommend the Commission apply my 9.65% recommended ROE to a 45% common equity ratio. My capital structure recommendation is supported by the financial covenants contained in the loan agreement Confluence executed with CoBank on December 5, 2022. I recommend applying the embedded cost (6.23%) of Confluence's loan from CoBank to the remaining 55% of capital in my recommended capital structure. This forms the basis for my recommended weighted-averaged-after-tax ROR of 7.77% to set Confluence's revenue requirement.

Q. Can you briefly elaborate on why you consider a 9.65% authorized ROE reasonable for Confluence?

A. Yes. Despite recent increases in long-term corporate and United States' Treasury ("UST") bond yields (*i.e.* long-term interest rates) the water utility industry's cost of common equity ("COE") has remained fairly stable during this period, which I will demonstrate when analyzing utility stock valuation levels and discussing my COE analysis. Specifically, on a price to earnings ("P/E") ratio basis, water utility stocks have been trading at average premiums of 55% to 60% to that of the local natural gas distribution utility subsector and the electric utility subsector in 2023. The more expensive it is for an investor to purchase a unit of earnings, the cheaper it is for the issuer to sell its stock. The significant relative premium at which water utility stocks trade to electric and local natural gas distribution

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utilities supports a relatively lower authorized ROE before any company-specific adjustments.

Confluence and its parent companies, CSWR LLC and US Water Systems LLC, are not publicly-traded companies as compared to MAWC's parent company, American Water Works Company Inc. ("American Water"). Thus, other than the loan Confluence recently closed with CoBank, there are no public market transactions to evaluate for purposes of estimating Confluence's COE. Therefore, I analyzed the credit metrics of CSWR LLC's legacy Missouri operating utility companies to evaluate the prospective credit risk profile of Confluence's investment in its systems. Based on my analysis, I estimate that Confluence's *pro forma* credit risk profile would be consistent with an investment-grade credit rating. However, due to the need for significant upfront capital investment in many of the systems before rates are increased, it is reasonable to allow an additional company-specific risk premium to a fair and reasonable ROE for an average water utility company. I recommend a 65 basis points upward adjustment to the base ROE I consider reasonable for a company such as MAWC. I quantified my adjustment by applying half of a recent spread between 'BBB'-rated bonds and 'BB'-rated bonds.

Q. In what order will you present your testimony as it relates to your recommended capital structure, cost of debt and authorized ROE?

A. First, I will present my capital structure recommendation, as this analysis assisted with my determination of an appropriate ROE recommendation in this case. Second, I will outline my logic for my cost of debt recommendation within my capital structure testimony. Third, I will present capital market information related to the utility industry to provide context as it relates to my COE analysis. Fourth, I will provide my estimate of the water utility industry's COE by analyzing a proxy group of water utility companies. Finally, I will provide the logic for my recommended authorized ROE considering relative differences in the COE for the various subsectors of the utility industry, the Commission's past-authorized ROEs, and consideration of authorized ROEs in other jurisdictions.

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CAPITAL STRUCTURE

Q. Will you briefly explain capital structure?

A. Capital structure represents how a company finances its assets. The typical capital structure consists of common equity, long-term debt, and short-term debt. Although short-term debt is typically a consistent component of utility companies' capital structures, if short-term debt balances are fairly consistent with or below construction work in progress ("CWIP") balances, then it is fair to exclude short-term debt from the rate making capital structure, due to the expectation that the cost of short-term debt is used to calculate the allowance for funds used during construction ("AFUDC") capitalization rate.

Q. Have you independently verified the AFUDC rate Confluence uses to capitalize CWIP?

A. No. At the time I prepared this testimony, I had not independently verified this rate. I plan to address the details of this issue in rebuttal testimony.

Q. What capital structure do you recommend for purposes of setting Confluence's ROR?

A. I recommend a capital structure consisting of 45% common equity and 55% long-term debt.

Q. What is the basis for your capital structure recommendation?

A. My recommended capital structure is consistent with the maximum amount of debt that Confluence's lender, CoBank, would allow Confluence pursuant to the financial covenants contained in the loan agreement executed on December 22, 2022.

Q. What does Confluence's December 31, 2022 balance sheet identify as its capital structure balances?

A. Confluence's December 31, 2022 unadjusted balance sheet provides the following balances for its common equity and liabilities: **

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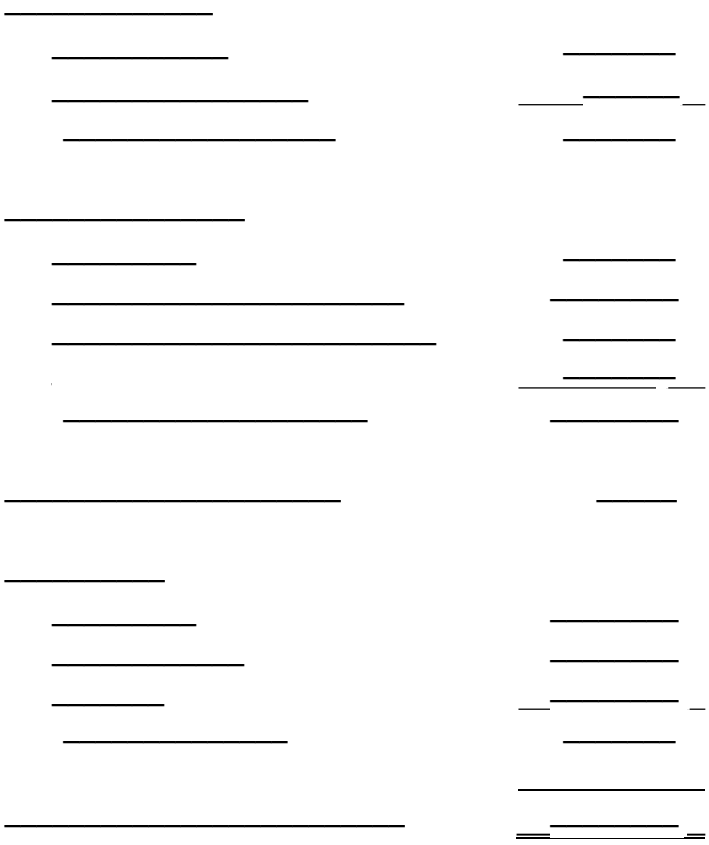

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See Schedule DM-D-2 for Confluence's complete balance sheet at December 31, 2022. Based on this information, Confluence had ** _____ ** of common equity and $7,000,000 of third-party (CoBank) debt, which implies Confluence's capital structure consists of ** _____ ** common equity and ** _____ ** long-term debt. Adding the Payable to Associated Companies balance of ** _____ **to long-term debt implies an even more leveraged capital structure containing only ** _____ ** common equity. However, these classifications do not provide an accurate representation of Confluence's capital structure from a financial risk point of view. Confluence's December 22, 2022 credit agreement with CoBank provides a more accurate definition for determining Confluence's capital structure.

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Q. How does CoBank determine Confluence's capital structure for purposes of its loan covenant?

A. The credit agreement between CoBank and Confluence provides the following definition of Total Debt to Total Capitalization:

**_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____ **[1]

Because CoBank's estimate of Confluence's net worth (*i.e.* equity) balance excludes affiliate liabilities (referred to as Holding Company Debt in the definition), the lender views the approximate ** _____ **of affiliate payables as equity. This causes Confluence's equity balance to be much higher than that which is implied by Confluence's per books balance sheet. Based on CoBank's definition of debt-to-total-capitalization, Confluence's common equity ratio is approximately 73%.

Q. Do you agree with CoBank's assessment of Confluence's actual capital structure?

A. Yes.

Q. Is this actual capital structure reasonable for purposes of setting Confluence's ROR?

A. No.

[1]Schedule DM-D-3, pgs. 11 – 12.

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Q. Why?

A. Because Confluence could have borrowed more from CoBank pursuant to the loan covenants but chose not to.

Q. What was Confluence's rationale for borrowing $7 million rather than some other amount?

A. Confluence borrowed $7 million to refinance the affiliate debt from Fresh Start Venture LLC ("Fresh Start") previously outstanding at Hillcrest Utility Operating Company Inc. ("Hillcrest"), Raccoon Creek Utility Operating Company Inc. ("Raccoon Creek"), Indian Hills Utility Operating Company Inc. ("Indian Hills") and Elm Hills Utility Operating Company Inc. ("Elm Hills").

Q. Was it necessary to issue $7 million in CoBank debt to redeem the Fresh Start loans?

A. No. Sciens Capital Management LLC purchased both CSWR LLC and Fresh Start. Based on the documents and DR responses provided in context of this case and the 2020 Elm Hills Utility Operating Company rate case, Case No. WR-2020-0275, no entity's/person's financial interest was subordinated by the Fresh Start loans.[2] Therefore, Sciens Capital owned the rights to all cash flows generated by CSWR's investments, whether they were flowed through Fresh Start or CSWR.

Q. Why is this important to understand?

A. Because this establishes the irrelevance of choosing to borrow $7 million from CoBank rather than some other amount. Based on my analysis of Confluence's financial statements, the CoBank financial covenants and the correspondence exchanged between CoBank and Confluence, Confluence could have incurred more debt to finance its assets.

[2] Confluence's response to OPC Data Request No. 3046 and Elm Hills responses to OPC Data Request Nos. 3016 and 3017 in Case No. WR-2020-0275.

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Q. Of Confluence's legacy companies, which entities are producing the healthiest cash flows?

A. Hillcrest and Raccoon Creek because they had their revenue requirements set based on the 14% rate assigned to the Fresh Start financing agreements. Between the high ROR allowed in those rate cases and the lack of significant additional investment in these systems (in the case of Raccoon Creek its plant balances have declined for the 2017 to 2020 period), the cash flows provided by high rates from these systems account for a significant proportion of Confluence's cash flows available for debt service.

Q. If Confluence's ROR were set lower based on your recommended capital structure, will this lower the cash flows Confluence has available for debt service?

A. Yes, but not below amounts sufficient to meet CoBank's debt covenants. In addition, imputing more debt in Confluence's authorized ROR will cause US Water Systems investors to earn a more reasonable ROE. Because of the lack of transparency into Sciens' capitalization of its investment in US Water Systems, it is currently not possible to determine the amount of equity capital actually invested in CSWR's operating utilities.

Q. Should Confluence's systems be charged different RORs?

A. Maybe. If the Commission were to accept Confluence's position that its capital structure can only support 35% debt, then the majority of this debt should be assigned to the revenue requirement charged to ratepayers of the systems who have already established the low risk profile associated with the cash flows they provide through high rates.

Q. Why?

A. Because Hillcrest's, Raccoon Creek's, Indian Hills' and Elm Hills' ratepayers are currently funding the majority of current cash flows available to service the CoBank debt.

Q. How much of Confluence's estimated 2021 operating margin was attributable to the systems previously owned by the aforementioned legacy companies?

A. ** _____
_____
_____
_____
_____ **[3]

Q. Did you calculate and analyze the credit metrics of each of these legacy companies to determine the credit profile of these entities?

A. Yes, but only through 2020.

Q. Why did you not calculate and analyze this data for more recent periods?

A. Because Confluence did not produce this data in response to OPC Data Request Nos. 3018 and 3019 in which I requested quarterly and annual financial statement information for all of these companies for the period March 31, 2020 through December 31, 2022.

Q. Why did you limit your request to information since March 31, 2020?

A. Because Elm Hills had already provided OPC the quarterly financial statement information of all the legacy operating subsidiaries for periods prior to March 31, 2020 in context of Elm Hills' 2020 rate case, Case No. WR-2020-0275. The financial statement information provided to OPC in context of that case allowed me to perform a comprehensive analysis of the creditworthiness of those companies post authorized rate increases.

[3] CSWR's 2021 Budget Presentation to US Water Systems LLC (provided in response to Staff Data Request No. 0262.

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Q. Has Confluence provided any updated quarterly financial statement information for the legacy companies?

A. No. Confluence's response to OPC Data Request No. 3018 referred me to its response to Staff Data Request No. 5 and No. 155. Confluence's response to Staff Data Request No. 155 did not include any financial statement information. Confluence's response to Staff Data Request No. 5 only included quarterly financial statement information for Confluence and CSWR LLC.

Q. Is OPC pursuing this information?

A. Yes. OPC's Motion to Compel filed on May 11, 2023 includes OPC's Data Request Nos. 3018 and 3019.

Q. Should this financial statement information be available for the legacy companies through 2022?

A. Yes. The merger of the legacy companies into Confluence did not occur until December 31, 2021. Therefore, financial information should be available at least through the end of the 2021 calendar year. Additionally, based on the fact that the Fresh Start loans for Hillcrest, Raccoon Creek, Indian Hills and Elm Hills were still outstanding through December 5, 2022, these companies would still need to report their financial results separately for purposes of Fresh Start's ability to track the separate Fresh Start loan obligations.

Q. Were you able to update any of this financial statement information without Confluence's cooperation?

A. Yes. I relied on each company's 2020 annual reports filed with the Commission.

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Q. Will you update your analysis if Confluence provides more recent information for the legacy companies?

A. Yes. If and when Confluence provides the more recent financial data for the legacy companies, I will update my credit analysis.

Q. When were rates increased for the legacy companies that were merged into Confluence?

A. Hillcrest's and Raccoon Creek's rates were increased in 2017; Indian Hills' rates were increased in the spring of 2018; Confluence's rates were increased on July 1, 2020; and Elm Hills' rates were increased on February 27, 2021. Osage Water has not increased its rates since it acquired its systems on June 19, 2020.

Q. Are all of the companies' financial results relevant for purposes of evaluating the risk profile for investments in Confluence's water and sewer systems?

A. No. Confluence continues to grow through acquisitions of systems needing additional investment and subsequent rate increases. Confluence's current cash flow profile is not representative of rehabilitated systems in which the capital has been expended and ratepayers are paying a return on and a return of the capital.

Q. For purposes of evaluating the historical financial performance of the companies, did you treat the Fresh Start financing agreement as debt?

A. No.

Q. Why not?

A. Because as I indicated previously, apparently US Water Systems acquired both CSWR and Fresh Start.[4] Consequently, no equity investors were subordinated by the Fresh Start

[4] Case No. WR-2020-0275, Elm Hills Response to OPC Data Request Nos. 3016 and 3017.

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financing agreement. Therefore, this contract serves no legitimate economic purpose, except for potential tax consequences.

Q. What capital structure did you assume for purposes of your credit analysis?

A. I assumed each of these entities were funded with 55% debt consistent with CoBank's financial covenants.

Q. What credit metrics did you evaluate to estimate the credit quality of the legacy companies?

A. I evaluated the credit metrics Standard & Poor's (S&P's) typically analyzes in assessing the credit quality of utility companies. These credit metrics are as follows: funds-from-operations to total debt (FFO/Debt), debt to earnings before interest, taxes, depreciation and amortization (Debt/EBITDA), and FFO-to-interest expense (FFO/interest).

Q. What credit metrics are contained in the financial covenants in CoBank's credit agreement with Confluence?

A. Debt/EBITDA, debt-to-total capitalization, and a debt service coverage ratio.

Q. Are there nuances to CoBank's financial covenants?

A. Yes. CoBank adjusts the ratios to exclude any affiliate financing obligations and CSWR overhead expenses charged to the operating utility companies.

Q. What interest rate did you assume for purposes of your analysis?

A. The same 6.6% rate that CoBank charged Confluence on its $7 million loan. Although this rate is higher than that which these entities would have been charged before recent increases in interest rates, in order to be conservative in my analysis, I assumed each entity incurred this higher rate for purposes of my *pro forma* adjustments to each operating utility company's historical financial statements.

Q. If Hillcrest, Raccoon Creek, Indian Hills and Elm Hills had executed loans with CoBank before 2022, what cost of debt would they have paid?

A. Around 4.5%.[5]

Q. Would the lower rate have been fixed through the entire tenor of the loan?

A. Probably not. Confluence's fixed rate on its executed loan agreement with CoBank only applies to the first five years of the loan. Therefore, if any of the aforementioned operating utility companies had refinanced their affiliate loans from Fresh Start when Sciens Capital purchased CSWR and Fresh Start on November 1, 2018, the rate likely would have been reset at some point.

Q. Using your more conservative assumption, *i.e.* a higher interest rate, what did your analysis of these companies' *pro forma* financials show?

A. For the detailed quantitative information related to my analysis, please see Schedule DM-D-4 attached to my testimony. My qualitative discussion follows.

Hillcrest's historical credit metrics would have been consistent with an "intermediate" financial risk profile (FRP), which when compared against the "Medial Volatility" benchmarks typically used for most utility companies,[6] results in an estimated credit rating of as high as a 'BBB+' to 'A-' rating, which is considered a strong credit profile.

Raccoon Creek's historical credit metrics would have been consistent with a "significant" FRP, which when compared against the "Medial Volatility" benchmarks, results in at least an estimated 'BBB' rating, which is investment grade.

[5] Case No. WF-2023-0023, Confluence's Response to Staff Data Request No. 17.
[6] S&P typically uses the "Medial Volatility" benchmarks for integrated electric utility companies, some local gas distribution companies ("LDC") and some transmission and distribution utilities. However, S&P often uses the "Low Volatility" benchmarks for the water and sewer industry and some LDC's such as Spire Missouri. The use of "Low Volatility" benchmarks means the company can use more leverage than a company measured against the "Medial Volatility" benchmarks and still have a similar credit rating (i.e. lower cost of capital because of less business risk).

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Indian Hills' FRP historical credit metrics would have been consistent with a "significant" FRP, albeit toward the weaker end of the range of metrics for this category. Therefore, although Indian Hills may still have a credit profile consistent with an investment grade credit rating (no lower than a 'BBB-'), it would be rated the lowest of all the legacy companies.[7]

Q. How do CSWR's legacy Missouri subsidiaries' FFO/debt ratios compare to Missouri's larger utilities' FFO/debt ratios?

A. Hillcrest's FFO/debt ratios have consistently been much stronger (less financial risk) than Missouri's larger utilities. Raccoon Creek's FFO/debt ratio in 2020 was consistent with Hillcrest's FFO/debt ratios for the period 2018 through 2020, which are much stronger than Missouri's larger utilities. Indian Hills' FFO/debt ratios were weaker than Missouri's larger utilities. Schedule DM-D-5 attached to my testimony provides the specifics of each of the aforementioned legacy companies' FFO/debt ratios post rate increases through 2020 as compared to Missouri's larger utilities for the same period, as well as for 2021 and 2022.

Q. How do CSWR's legacy companies' FFO/debt ratios compare to MAWC's parent company's, American Water, FFO/debt ratios?

A. They are much higher than American Water's FFO/debt ratios of around 13% to 14%.

Q. What is American Water's S&P credit rating?

A. 'A.'

Q. How is American Water able to achieve such a high credit rating despite its weaker leverage ratios?

A. Rating agencies, such as S&P Global Ratings, allow the water utility industry to carry more leverage due to applying less stringent credit metrics as it relates to financial risk. S&P

[7] Indian Hills' rate increases became effective on March 17, 2018. Therefore, the 2018 financial statements do not include a full year of revenues related to these rate increases. However, 2019 provides a full year of results under the increased rates.

Global Ratings applies "low volatility" benchmarks to the water utility industry as compared to "medial volatility" benchmarks to the integrated electric utility industry. For example, S&P allows water utility companies to have funds from operations-to-debt (FFO/debt) ratios of as low 9% to 13% and still maintain an 'A' credit rating. However, most integrated electric utility companies need to consistently achieve FFO/debt ratios of 13% to 23% in order to maintain an 'A' credit rating.

Q. How did the volatility of CSWR's legacy companies' financial results compare to Missouri's other major utilities?

A. Based on the financial metric earnings before interest, taxes, depreciation and amortization ("EBITDA") for the period 2018 through 2020, Hillcrest had the lowest volatility of all of Missouri's utilities. The volatility of Raccoon Creek's EBITDA results fell in between Missouri's other utilities. Please see Schedule DM-D-6 for the details of my analysis.

Q. Would you be able to provide the Commission more recent and robust data to evaluate Confluence's anticipated risk profile if Confluence provides financial results for the legacy companies through 2022?

A. Yes. As I indicated previously, if Confluence is compelled to provide this information, the Commission will have a more complete record in which to determine the expected risk profile of Confluence after it receives rate relief in this case.

Q. What do you conclude from your analysis?

A. If the Commission sets Confluence's rates based on a capital structure consisting of 45% common equity and 55% long-term debt, Confluence's credit risk profile would be consistent with an investment-grade credit rating ('BBB-' or higher).

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Q. What is Confluence's current credit profile, assuming it is not granted rate relief in this case?

A. Very weak as shown at the bottom of Schedule DM-D-4. In fact, based on its financial results during the last couple of years, after netting CSWR's corporate overhead from cash flows, it would not have any cash flow from operations available to service debt.

Q. If Confluence does not generate sufficient cash flow to cover potential debt service, why was CoBank willing to loan Confluence $7 million?

A. Because CoBank adds back CSWR's overhead expenses for purposes of assessing Confluence's estimated cash flow available to cover debt service. CoBank also nets out affiliate liabilities for purposes of determining the amount of debt included in Confluence's capital structure for purposes of calculating Confluence's debt/EBITDA and debt/total capital ratios.

Q. Did you perform *pro forma* calculations to estimate Confluence's credit metrics if it borrowed 55% debt/total capital per CoBank's definition?

A. Yes. However, I could not refine the estimated amount of debt service for the *pro forma* higher amount of debt due to CoBank's unique amortization method. Therefore, I only show an estimate of the debt service coverage ratio using the debt service on Confluence's $7 million loan for the first full year requiring interest and principal payments (2024).

Q. What did your analysis imply about the amount of debt CoBank would have lent to Confluence based on its actual cash flows in 2022?

A. Confluence could have borrowed at least $14 million (see Schedule DM-D-7).

Q. After rates are increased in this case, would Confluence's cash flows support the potential for an even higher amount of debt in its capital structure?

A. Yes. Assuming constant operating and maintenance expenses in 2023, any increase in Confluence's rates would increase the amount of cash flow available to service debt.

Applying CoBank's 6x debt/EBITDA to a pro forma EBITDA of approximately $5.5 million would allow for total debt of approximately $33 million.

Q. What percentage of Confluence's 2022 total capital does this comprise?

A. 127% of total capital.

Q. Are you suggesting that the Commission set Confluence's ROR based on 100% debt financing?

A. No. I am simply illustrating the fact that Confluence should not be authorized a common equity ratio significantly above that which the Commission authorizes Missouri's larger utilities. Additionally, the Commission does not need to authorize Confluence an ROE much higher than it authorizes Missouri's larger utilities. Although the utility systems purchased by Confluence typically require significant capital expenditures relative to the existing asset base, experience proves that the Commission does not need to authorize an unreasonably high ROR to attract capital for investment in the systems.

Q. Why does CSWR seek to minimize the amount of debt it borrows at the operating utility level?

A. Because this maximizes the amount of cash flows available to CSWR's investors, Sciens Water Opportunity Fund ("SWOF"), through its direct ownership in US Water Systems.

Q. How is the SWOF raising capital for purposes of its investment in US Water Systems?

A. Based on my general understanding and certain information available to me, it appears that CSWR's management makes its business case to US Water Systems LLC through **

[8] The Sciens Water Opportunity Fund appears to be the main vehicle in which high net-worth and/or institutional investors commit to provide equity capital. Sciens Water Opportunity Fund currently owns five companies through direct and active investments with CSWR LLC being one of these companies. For more information, see the following website: https://scienswater.com/

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Q. Is it clear as to how US Water Systems LLC raises its capital?

A. No. While it appears there are rounds of equity funding through closed-end private equity funds, I also discovered that the SWOF created a financing subsidiary, Sciens Water Finance Corporation ("SWFC"), for purposes of raising debt capital on behalf of its portfolio of companies. Sciens Water's website states the following about SWFC's purpose:

> Sciens Water Management has formed Sciens Water Finance Corporation ("SWFC"). SWFC provides debt and other alternative financing solutions to water-related hard asset projects originated by the SWOF portfolio companies and third-parties.

Q. Are SWOF's other companies affiliates to CSWR and therefore, Confluence, as defined under the Commission's rules?

A. Yes.

Q. Did you issue Confluence a data request to identify all of its affiliates?

A. Yes. OPC Data Request No. 3036 requested Confluence to identify all of its affiliates. Confluence's response only identified the companies under the CSWR organizational umbrella (see Schedule DM-D-8).

Q. Are you concerned about the reliability of Confluence's responses to DRs in this case?

A. Yes. In addition to Confluence's providing a factually incorrect response to OPC Data Request No. 3036, I discovered other responses were factually incorrect. Confluence's response to OPC DR Nos. 3039 and 3042 indicated that ** _____ _____ **. My review of the US Water Systems LLC agreement proved these responses were factually incorrect.

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Also, for purposes of my analysis of the cost of the CoBank loan, I issued OPC Data Request No. 3028 to inquire as to the impact CoBank's patronage credit would have on the effective cost. Confluence answered as follows (*see* Schedule DM-D-9, p. 1):

> The Company has no formulaic means of calculating the amount of the patronage credit. The Company does not expect the amount to be material, but the amount will be recorded in the books and records of Confluence if/when any patronage is received.

However, in my review of correspondence exchanged between Confluence and CoBank, I discovered that CoBank indicated that the patronage credit ** _____ _____ _____ _____ **

Q. What is your recommended cost of debt in this case?

A. Based on my consideration of the above information along with the interest rate and the administrative closing costs of the CoBank loan, my recommended cost of debt is 6.23%.

Q. Should this cost of debt be adjusted to consider the fact that you imputed more debt in Confluence's capital structure than that which CoBank actually loaned to Confluence?

A. No. I reviewed the correspondence, terms and analysis related to the loan Confluence received from CoBank. I did not discover any information indicating the CoBank would have charged Confluence a higher rate if it had borrowed the maximum amount allowed by CoBank's financial covenants.

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FAIR RETURN ON COMMON EQUITY

Q. What is the most often cited basis for determining a fair and reasonable ROE for purposes of setting utility rates?

A. The following principles of the *Hope*[9] and *Bluefield*[10] Supreme Court of the United States cases are often cited as criteria in setting a fair and reasonable ROE for purposes of utility ratemaking:

1. Comparable returns for similar risk;
2. Financial integrity/maintain credit; and
3. Capital attraction.

The *Hope* (1943) and *Bluefield* (1923) principles were established well before the advent of modern cost of equity methods, such as the discounted cash flow ("DCF") method and the Capital Asset Pricing Model ("CAPM"). Therefore, while setting ROEs based on the COE has generally been considered consistent with the *Hope* and *Bluefield* principles, other factors, such as other jurisdictions' authorized ROEs have been cited by this Commission as a relevant factor it should consider. The authorized ROE is a regulatory ratemaking concept that quantifies the amount of net income allowed in the revenue requirement. The COE is a market-based concept that quantifies an investors' required return on his/her common equity investment. Because ROEs have generally been set in the 9% range, while an overwhelming amount of evidence demonstrates that investors' required returns (*i.e.* COE) on utility equity investments are lower, I correctly differentiate between allowed ROEs and the COE in my analysis and recommendation.

[9] *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1943).
[10] *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923).

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Q. How did you determine the approach you would take to estimate a fair and reasonable allowed ROE for purposes of this case?

A. I reconciled the principles established in *Hope* and *Bluefield* with the modern financial models used to estimate the COE.

Considering these principles, I first estimate the water utility industry's current COE using modern financial models/methods to a water utility proxy group. Then I compare my estimate of the water utility industry's current COE to my historical COE estimates for the water utility industry, as well as to my recent COE estimates for the electric and local natural gas distribution utility industries. Finally, I considered the Commission's "zone of reasonableness standard"[11] for purposes of setting an allowed ROE, with the starting point for this zone of reasonableness being a recent industry average allowed ROE.

Q. Based on your analysis of recent capital market conditions, what is your estimate of the water utility industry's current COE?

A. The water utility industry's current COE is in the range of 6.25% to 6.75%.

Q. How does your COE estimate for the water utility industry compare to your recent COE estimates for the electric and local natural gas distribution utility industries?

A. It is approximately 75 to 100 basis points lower. I estimated a COE of 7.25% to 7.5% for the local natural gas distribution industry in Spire Missouri's 2022 rate case, Case No. GR-2022-0179. I estimated a COE of 7% to 7.5% for the electric utility industry in Evergy Metro's and Evergy Missouri West's 2022 rate cases, Case Nos. ER-2022-0129 and ER-2022-0130, respectively.

[11] *State ex rel. Missouri Gas Energy v. Public Service Commission,* 186 S.W.3d 376, 383 (Mo App. W.D. 2005)

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Q. Based on your analysis and awareness of capital market conditions, investor expectations and recent average allowed ROEs for water and sewer utilities, what do you consider to be a fair and reasonable allowed ROE for an average water utility, such as Missouri American Water Company ("MAWC")?

A. 9.00% based on a range of 8.60% to 9.25%. The lowest ROE the Commission would consider under its "zone of reasonableness" standard depends on the average allowed ROE data on which the Commission relies. The average allowed ROE for water utilities for 2022 was 9.61%, based on eight cases (range of 9.1% to 10.0% with a median of 9.65%). This compares to an average authorized ROE of 9.53% for natural gas utilities and 9.54% for electric utilities for the same period. In 2023, the average allowed ROE for water utilities through May 3, 2023 was 9.4%.[12] This compares to an average authorized ROE of 9.75% for natural gas utilities and 9.71% for electric utilities for the first quarter of 2023.

I recommend the Commission use an allowed ROE of approximately 9.60% as the starting point for its zone of reasonableness standard. Subtracting 100 basis points from this average authorized ROE forms the basis for the low-end of the Commission's zone of reasonableness of 8.6% with 10.6% representing the high end of the Commission's zone of reasonableness.

Q. Is it fair to consider an adjustment to the baseline ROE you consider appropriate for an established water and sewer utility such as MAWC for purposes of setting Confluence's authorized ROE?

A. Yes. Despite the fact that my credit analysis of CSWR's rehabilitated legacy systems indicates investment grade credit ratings, I recognize the fact these systems rely on bank financing rather than direct access to debt capital markets. This practical matter regarding access to capital along with some uncertainty related to future financial performance of the acquired systems, justifies a 65 basis point upward adjustment. Therefore, I consider a

[12] Heike Doerr, "Flood of water utility rate cases completed in recent weeks," RRA Regulatory Focus, May 9, 2023.

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reasonable authorized ROE for Confluence to be in the range of 9.25% to 9.9%, with my point recommendation being 9.65%.

Q. Is your recommended 9.65% ROE contingent on the Commission adopting your recommended capital structure?

A. Yes. My credit analysis was based on my *pro forma* assumption that CSWR capitalized its Missouri utilities with 45% common equity and 55% long-term debt. Hillcrest's and Raccoon Creek's credit metrics were consistent with stable investment grade ratings even with the assumed higher leverage. Indian Hills' credit metrics were a bit weaker, which contributed to my decision to recommend a 65 basis point adjustment based upon half of the approximate 130 basis points difference between 'BBB'-rated bonds and 'BB'-rated bonds.

Q. When will you provide your ROE recommendation for a less leveraged capital structure similar to Confluence's request in its direct testimony?

A. In my rebuttal testimony.

Q. How did you inform yourself for purposes of determining the best methods and approaches to use to estimate the water utility industry's COE for this case?

A. In the recent MAWC rate case, Case No. WR-2022-0303, I reviewed investment industry research covering American Water and the utility industry in general since September 30, 2020. I had also reviewed investor research in prior periods in conjunction with prior MAWC rate cases. This information provided me insight as to the types of methods/models typically used by investors to determine fair prices to pay for utility stocks. Consequently, I decided the best approach to estimate the water utility industry's COE was to apply COE methods/models to a proxy group of publicly-traded water utility companies.

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Q. Did you attempt to discover other information, which could have provided additional insight on CSWR's and its investors' views related to a fair and reasonable cost of capital to apply to its investments in Confluence?

A. Yes. I issued data requests requesting the presentations CSWR's management makes to its investors, as well as specific valuation analysis CSWR must perform for purposes of ensuring its balance sheets accurately report the carrying value of its assets, but to date, Confluence has not produced this information.[13]

Q. Is this information relevant to authorizing a fair and reasonable ROR?

A. Yes. This information typically provides direct insight as to a company's internal views related to its cost of capital, risk profile and expected returns related to its investments.

Q. How did you determine a fair and reasonable allowed ROE to recommend for an average water and sewer utility company?

A. I compared the trends in various valuation ratios to proxy groups for the electric utility industry, the local natural gas distribution utility industry and the water utility industry. This information is helpful for purposes of comparing and contrasting the characteristics of water utility industry stocks to those of the electric and local natural gas distribution utility industries. My analysis shows that water utility industry stocks have been valued consistent with defensive-growth industries. In contrast, electric utility stocks and local natural gas distribution utility stocks are trading more similar to yield investments (*i.e.* not growth).

Q. What specific COE models did you use?

A. I used a multi-stage discounted cash flow ("DCF") method, with specific emphasis on consensus analysts' estimated dividends and the modeled growth of dividends. When the DCF method is applied to dividends as the proxy for cash flow, it is more specifically and appropriately defined as the dividend discount model ("DDM"). I also applied the Capital

[13] OPC DR Nos. 3025 and 3044.

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Asset Pricing Model ("CAPM") to the proxy group. Finally, I performed simple and logical reasonableness checks to test the reasonableness of my COE estimates. These reasonableness checks recognize the basic characteristics of utility stocks, mainly that because utility stocks are the safest industry sector in the S&P 500, their cost of equity should not be much higher than bond yields rated similar to the industry. This is around an 'A' rating for the water utility industry. One such reasonableness check is a straight-forward bond-yield-plus-risk-premium method included in the Chartered Financial Analyst ("CFA") Program curriculum.

Q. Was your approach substantially the same as you employed in recent rate cases involving Missouri's larger water, electric and gas utility companies?

A. Yes.

CAPITAL MARKET CONDITIONS

Q. Is it important to analyze capital market conditions over time as it relates to the utility industry in general and the water utility industry specifically?

A. Yes. This information provides context as to the current state of utility capital markets as it relates to historical periods. At times, I focus on shorter periods, because in recent years, the water utility industry's valuation ratios have expanded much more significantly than those of the electric and local natural gas distribution utility industries.

Q. Can you describe and illustrate recent and long-term changes in long-term bond yields?

A. Yes, long-term bond yields increased dramatically in 2022, peaking in October. At their peaks, investment-grade utility bond yields had almost doubled since the end of 2021 and long-term United States Treasury ("UST") bond yields had more than doubled since the end of 2021. This dramatic increase followed a period of historically low bond yields in 2020 and 2021.

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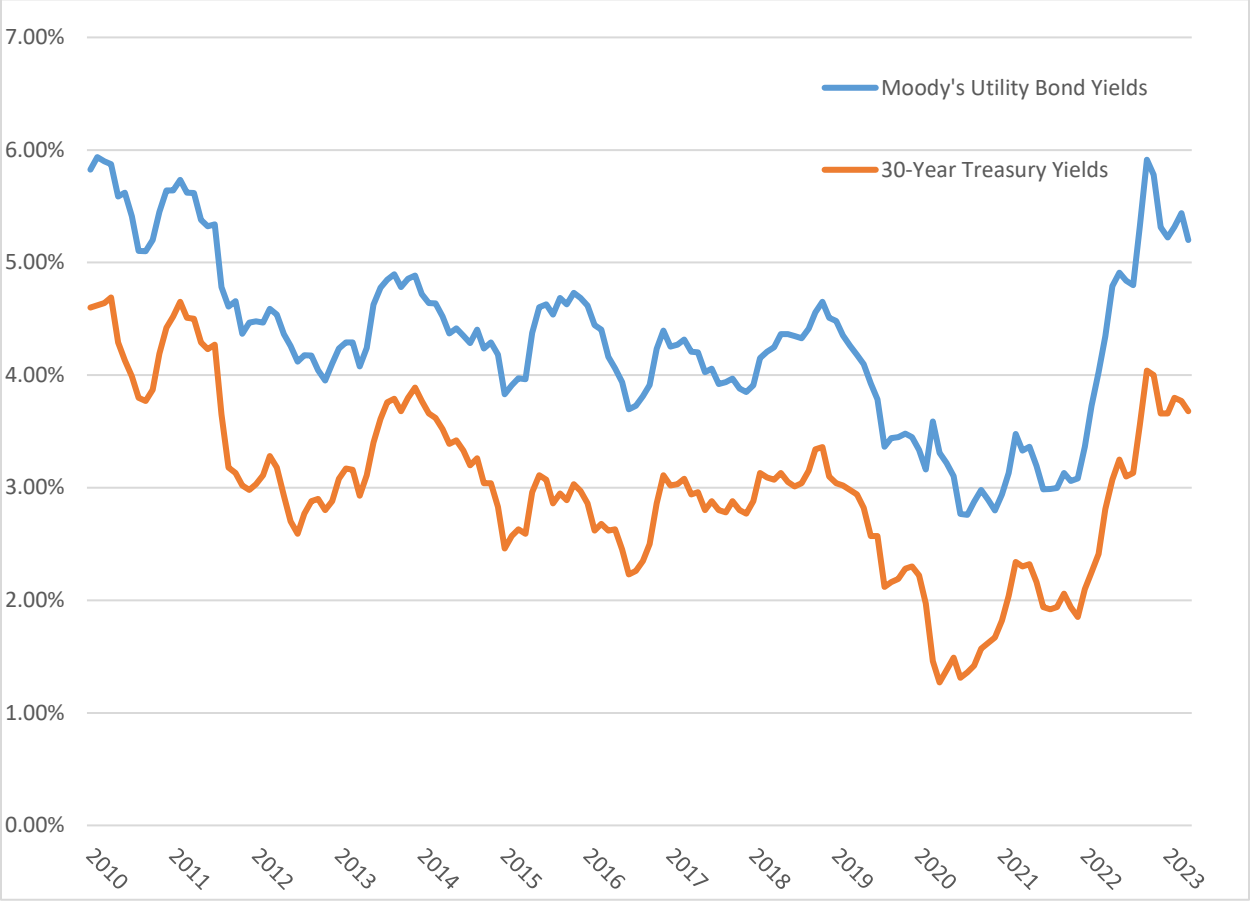
The below graph shows long-term bond yields since January 1, 2010. While the early stages of lower long-term interest rates in the first half of this decade were considered by some as potentially anomalous because of the Federal Reserve Bank's ("Fed") quantitative easing ("QE") programs[14] through October 2014, for the last half of the past decade, long-term interest rates continued an overall declining trend, until they reached all-time lows in 2020 and 2021. However, as can be seen, long-term rates increased dramatically in 2022, peaking in October 2022, before declining slightly through early 2023.



Average utility long-term bond yields had dropped to modern all-time lows in the latter half of 2020 - levels not experienced since the late 1940s and early 1950s. Analyzing bond yields since early 2022 may cause one to conclude that the utility industry's COE has increased dramatically, just as analyzing bond yields during much of 2020 and 2021 may

[14] QE involved three rounds of the Fed's direct intervention in bond markets beyond just lowering the Fed Funds rate. The Fed's QE programs had the express intent of reducing long-term interest rates.

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cause one to conclude that the utility industry's COE had decreased dramatically. However, post onset of Covid-19, capital markets have not traded consistent with underlying fundamentals. Much of this appears to be driven by the Fed's and U.S. Congress's massive interventions through monetary and fiscal policies, respectively.

Q. Why is it typically important to evaluate trends in long-term interest rates when evaluating the utility industry's COE?

A. The investment community typically regards utility stocks as bond proxies/pseudo bonds, meaning that if long-term bond yields decline, then this typically causes regulated utility stock prices to increase. Therefore, changes in utility stock valuation levels have historically had a strong inverse correlation to changes in bond yields, *i.e.* as bond yields decline, utility stock prices increase.

Q. Since April 2020, have utility stock valuations and bond yields traded consistent with historical patterns?

A. No. Following drastic and significant intervention by the Fed in monetary policy and the UST in fiscal policy in reaction to Covid-19 and its associated mitigation measures, the yield-to-maturity ("YTM") on utility and corporate bonds traded at 70-to-80 year lows. However, at the same time, broader utility stocks (mainly local natural gas distribution companies ("LDC") and electric utility stocks) underperformed the S&P 500. The same atypical trading pattern occurred as long-term bond yields began a dramatic increase in 2022. Utility stocks significantly outperformed the S&P 500 on a relative basis, despite the fact that long-term yields increased through much of 2022. The increase in yields caused the S&P 500 to contract significantly, while causing only a slight decline in utility stock prices, allowing them to maintain similar P/E ratios as before the rapid increase in long-term interest rates. However, as I will discuss later, starting in mid-September 2022, utility stocks finally resumed their more typical trading patterns with long-term yields.

Consequently, while the utility industry's debt costs have fluctuated along with the macro changes in interest rates, the same is not true for the utility industry's cost of equity. For

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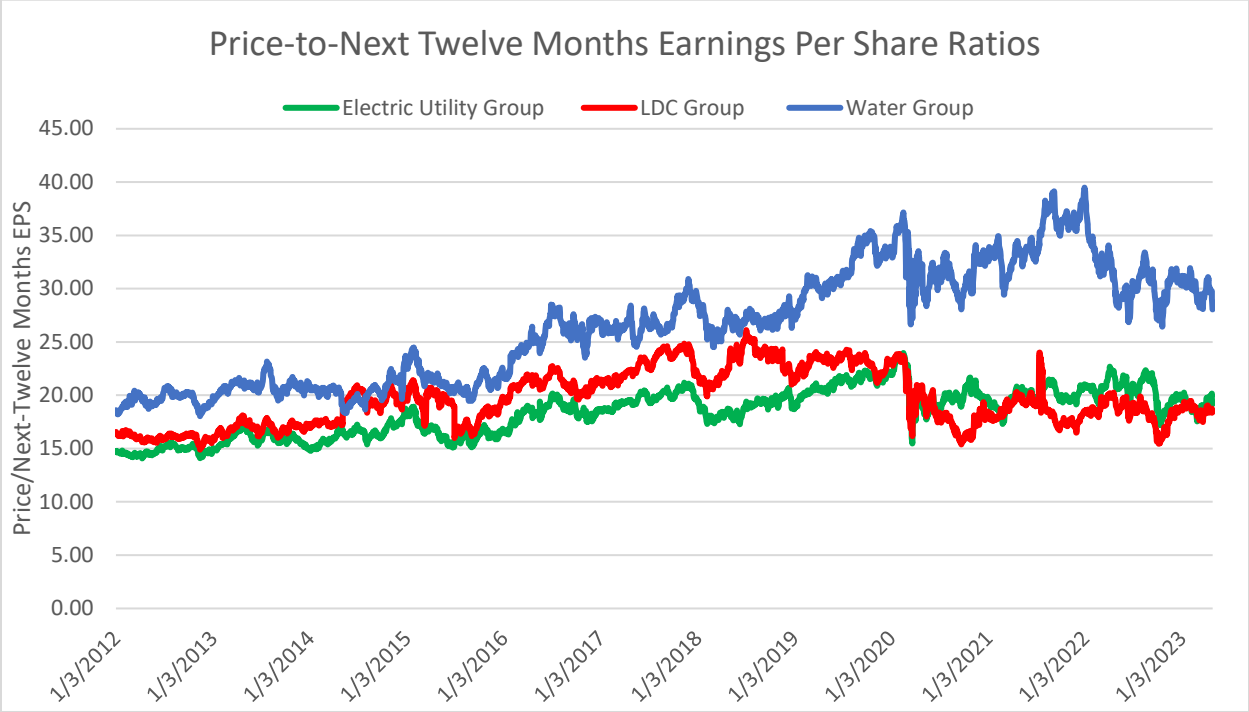
example, as I will discuss later in my analysis using the CAPM, the cost of equity indications using the CAPM implies that the utility industry's COE has also fluctuated significantly since 2020, but such indications are not consistent with current utility equity market valuations. Current utility equity market conditions imply that investors currently require a lower equity risk premium to invest in utility stocks as compared to bonds.

Further, comparing the specifics of water utility stock valuation levels to electric/gas utility stock valuation levels shows investors are assigning a significant premium to water utility stocks, especially recently. The resiliency in the water utility industry's valuation ratios is at least partially attributed to the fact that the cash flows expected from the higher-growth, long-lived water utility industry assets, are valued higher in present value terms due to lower discount rates.

Q. Can you provide a graphic illustration that compares the water utility industry's P/E ratios to the electric and the LDC utility industries?

A. Yes. See the below graph:



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As can be seen in the above graph, between 2012 to mid-2017, the water utility group's P/E ratio traded at a premium to the electrics utility group[15] generally in the 20% to 40% range and at a premium to LDC group[16] generally in the 10% to 25% range for the same period (there are some anomalies in the LDC P/E ratios from mid-2014 to mid-2015). In late 2018/early 2019 water utility P/E ratios expanded rapidly through the start of the pandemic, with electric utility P/E ratios increasing at a more modest pace and LDC's P/E ratios remaining fairly flat. This resulted in water utilities P/E ratios increasing to around a 60% premium to electric utilities and LDC's. Post the onset of the pandemic, in the fall of 2021, water utility stocks peaked at an 85% to 90% premium to electric utilities and a 110% to 115% premium to LDCs. Since the beginning of 2023, water utility P/E premiums have moderated to around 55% to 60% as compared to electric utility and LDC companies.

Q. Can the higher valuation ratios for water utilities also be illustrated by comparing water utility dividend yield data to those of the electric utility industry peer group[17] and the LDC peer group[18]?

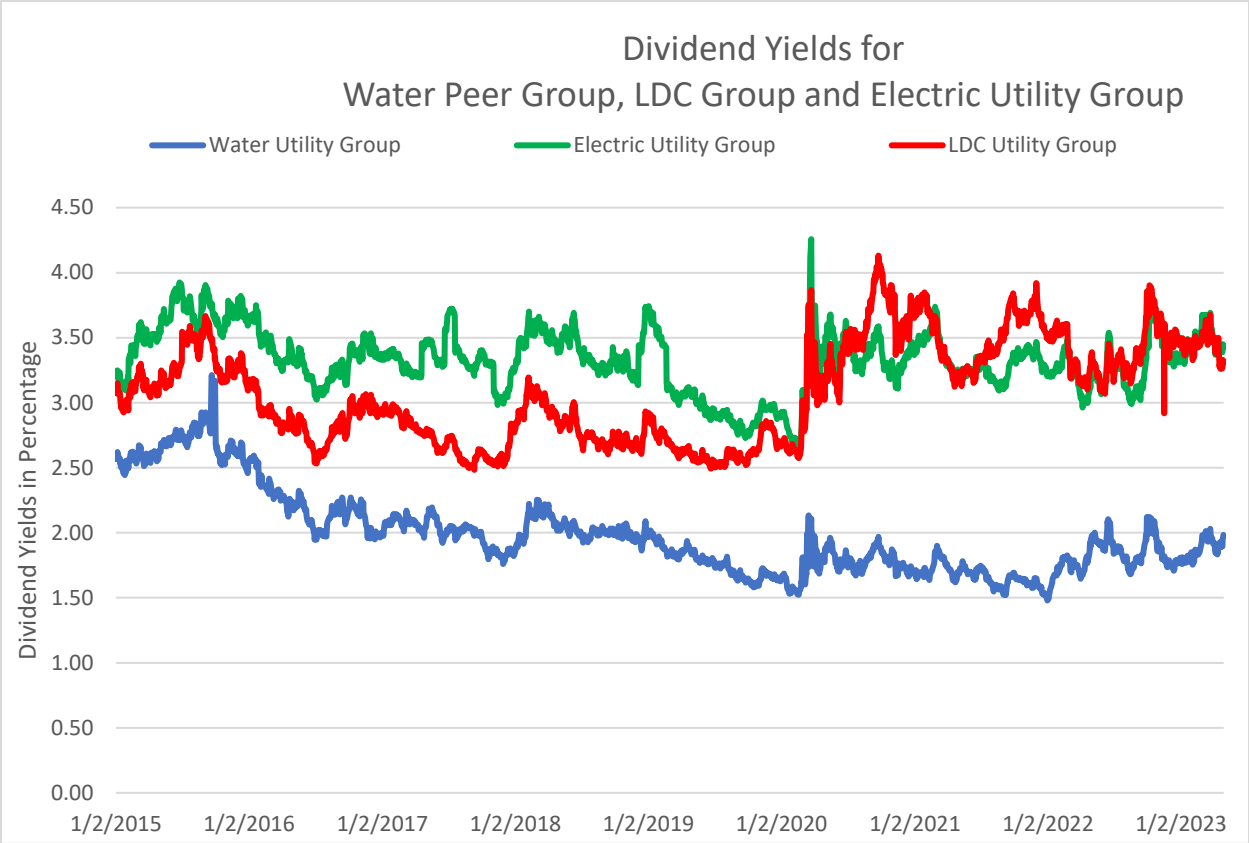
A. Yes. See the graphical illustration below:

[15] Includes the following companies: Alliant Energy, Ameren Corp, American Electric Power, CMS Energy, DTE Energy, Idacorp, OGE Energy, Pinnacle West Capital Corporation, Portland General Electric, Southern Company, WEC Energy and Excel Energy. [16] LDC group consists of the following companies: Atmos Energy Corporation, NiSource Inc., New Jersey Resources, Northwest Natural Gas and Spire Inc. (excluded One Gas because no P/E data available before 2015; South Jersey Industries because it is the target of a pending acquisition; and Southwest Gas because its stock price has been impacted by a "strategic review" related to potential sale of all or parts of its business).

[16] LDC group consists of the following companies: Atmos Energy Corporation, NiSource Inc., New Jersey Resources, Northwest Natural Gas and Spire Inc. (excluded One Gas because no P/E data available before 2015; South Jersey Industries because it is the target of a pending acquisition; and Southwest Gas because its stock price has been impacted by a "strategic review" related to potential sale of all or parts of its business).

[17] *Id.*

[18] *Id.*



As can be seen in the chart, in early 2015, the water utility group's dividend yield was about 75 basis points lower than the electric utility group's dividend yield and 50 basis points lower than the LDC utility group's dividend yield After 2015, the gap between the water utility peer group's dividend yields and the electric and LDC utility industries' dividend yields widened to approximately 100 basis points shortly before the beginning of massive stimulus measures taken by the Fed and the US Congress in March 2020. Subsequent to the extraordinary steps taken by the Fed and the US Congress to mitigate the economic impacts of the Covid-19 pandemic, the spread between the water utility industry's dividend yield and that of the electric and LDC industry's has been in the range of 150 to 200 basis points.

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Q. What was the water utility group's expected long-term compound annual growth rate ("CAGR") in earnings per share ("EPS") in 2015?

A. It was 5.38%.[19]

Q. What is it now?

A. 6.85%. Therefore, only a minor proportion of the water utility industry's expanded P/E ratio may be attributed to higher long-term growth rate expectations.

Q. If the expansion in the water utility industry's P/E ratios are not fully explained by higher long-term growth expectations, then what is the logical explanation for its significant expansion?

A. The expectation that water utility companies will be able to continue to achieve returns higher than their costs of capital.

Q. What reasons do Wall Street analysts often ascribe for water utility stocks trading at significant premiums to electric and gas utility companies?

A. Similar to other Wall Street analysts, Guggenheim offers the following explanation for the higher premiums it assigns to the water utility industry in general as compared to the electric and gas utility industries:

> Water utilities continue to be ascribed higher multiples versus electric/gas utility counterparts given higher growth prospects and less risk around CapEx, which haven't slowed and are not expected to anytime soon, and lower perceived risk vs. electric/gas peers.[20]

[19] Case No. WR-2015-0301, Staff Cost of Service Report, Appendix 2, Schedule 11-5, December 23, 2015.
[20] Shahriar Pourreza, et. al., "AWK: Straightforward Roll-Forward Comes with More Equity," Guggenheim Securities LLC, November 1, 2022.

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Q. Are you aware of investors that have used lower COE estimates to discount expected cash flows from an investment in water utility companies' stocks?

A. Yes. Wells Fargo uses a COE of 6.5% to estimate a fair value of most pure-play water utility companies. I also observed COE estimates below this estimate when I reviewed equity research in MAWC's recent 2022 rate case.[21]

Q. Are you aware of other investment analysts that ascribe lower costs of equity to the water utility industry as compared to the electric utility industry?

A. Yes. Evercore ISI indicated the following when it initiated coverage of the water utility industry:

> Unlike electrics and more similar to local distribution gas utilities water utility capex projects are numerous and much smaller so the project risk faced by electrics isn't there especially compared to large generation and transmission projects. Services provided by water utility are ingested and still on relative basis water bills represents a much smaller portion of average household's utility bills. Furthermore the infrastructure is in worse condition than electric and gas (Water is rated D while electric and gas is rated D+ by ASCE so capital expenditure budgets get less scrutiny from regulators). The lower perceived risk also corresponds, however, to lower allowed ROEs, in Exhibit 5 [in the original document] below we show a comparison of water vs electric ROEs for states which have highest percentage of investor owned water systems. On average authorized water ROEs tend to be 40 bps [basis points] lower vs electric.[22]

Evercore ISI went on to further state the following about expected allowed ROEs for the water utility industry:

> In valuing water utilities we assume the authorized ROEs falling to 8.75% from 9.25% which is 50 bps lower than their electric peers but we use the same ultimate 2.25% spread between ROE and cost of equity to account for the water industry's lower risk profile as we articulated above.[23]

[21] Case No. WR-2022-0303, Murray Direct Testimony, p. 27, lines 7-8.
[22] Durgesh Chopra, et. al, "Initiating Coverage On Water Utilities: Top pick AWK (OP); AWR (UP); WTR/CWT/SJW/CTWS (IL)," Evercore ISI, September 17, 2018, p. 10.
[23] *Id.,* p. 13.

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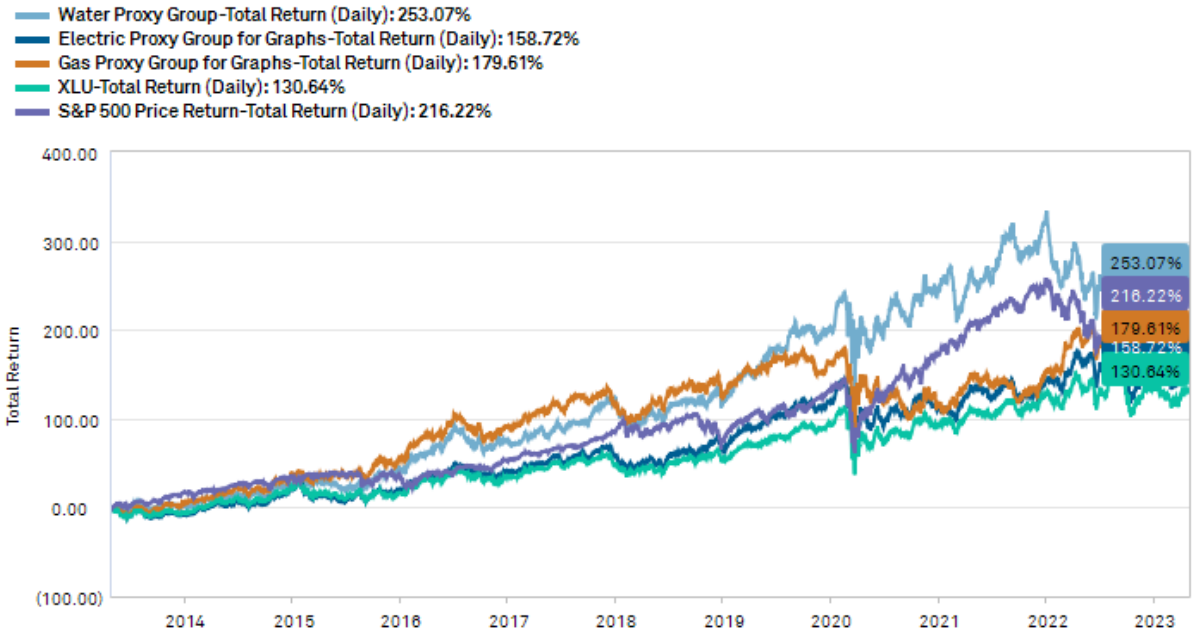
Q. Can you provide information on how the water utility industry's shareholder returns have compared to the S&P 500, a broad utility index, the LDC industry, and the electric utility industry over the last ten years?

A. Yes. See the below chart for a graphic illustration of water utility industry's total return as compared to the S&P 500 (SPX), a broad utility index (XLU), a representative LDC utility group, and a representative electric utility group.



The water utility industry's total shareholder returns have exceeded the total shareholder returns of the other various broad indexes and custom proxy groups. The water utility industry's total return of 253.07% over the last ten years translates into a 9.77% compound annual return. This compares to a compound annual return of 6.09% for the LDC utility group, 4.79% for the electric utility proxy group, 2.79% for the broad utility index, and 8.07% for the S&P 500.

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Q. Can you summarize your interpretation of the signals capital market conditions are providing as it relates to the cost of capital for the water utility industry in general?

A. Yes. It is simple to observe the increase in the cost of debt capital for the water utility industry. The cost of debt has been directly influenced by the Fed's tightening of monetary policy. The Fed has been tightening monetary policy in order to attempt to dampen inflationary pressures. Long-term fixed-rate bond valuations have been directly impacted by inflationary pressures because inflation erodes the value of the historical coupons determined during a lower interest-rate environment. To the extent investors fear further increases in inflation, this causes more concern about the value of fixed-rate coupon bonds. While utility stocks have bond-like characteristics, at least investors are compensated by the ability of utility companies to pass increasing costs (due to inflation) through to ratepayers due to cost of service ratemaking. Apparently, as is the case right now, this characteristic causes utility stocks to be more attractive than fixed-rate bonds. Consequently, the required returns on utility stocks may not be that much higher than current coupons on bonds.

COST OF EQUITY

Q. Now that you have provided some context on changes in utility capital market conditions generally, can you discuss how you decided to approach your COE estimate for Confluence in this case?

A. Yes. I performed a COE analysis on a proxy group of publicly-traded water utility holding companies. I used a multi-stage DCF approach and a CAPM. I then tested the reasonableness of my estimates by using some simple, straightforward sanity checks, such as the bond-yield-plus-risk-premium method discussed in the CFA curriculum.

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INVESTOR INSIGHT

Q. How have you informed yourself as to reasonable and rational inputs for your COE approaches?

A. Being that the objective of a ROR witness is to emulate investors' approaches to analyzing and making investment recommendations as it relates to investing in utility stocks, I have prioritized reviewing and analyzing how equity research analysts determine a utility stock price estimate in practice. This has allowed me to test the theory of cost of capital estimation in utility ROR testimony as it compares to how utility stocks are actually valued. I have discovered professional equity analysts typically use a combination of valuation approaches. Investment firms may use absolute/intrinsic valuation techniques, such as a multi-stage DCF approach to estimate fundamental values of utility stocks and/or they use relative valuation techniques that compare a company's P/E ratios to an average for the industry. In my experience, professional equity analysts project long-term CAGR in EPS to determine whether a company's P/E ratio deserves a premium or a discount to its peers. Professional equity analysts do not use these estimated long-term CAGRs in EPS as a proxy for a perpetual dividend growth rate, as some ROR witnesses suggest. Investment analysts use perpetual growth rates for the water utility industry in the range of 3.5% to 4.0% when discounting dividends using the DDM.[24] Finally and most relevant to the task at hand, they use a COE of approximately 6.5% to determine a fundamental value of projected cash flows (*i.e.* dividends) associated with owning a share of a water utility stock.[25]

[24] Neil Kalton, Sarah Akers, and Jonathan Reeder, "DDM Analysis Supports Sector Valuation & Quality/Growth Trade," Wells Fargo, August 19, 2019, p. 2; and Durgesh Chopra, et. al, "Initiating Coverage On Water Utilities: Top pick AWK (OP); AWR (UP); WTR/CWT/SJW/CTWS (IL)," Evercore ISI, September 17, 2018, p. 13.
[25] Jonathan Reeder and Neil Kalton, CFA, "AWK: '23 Guidance Not as Bad as Some Investors Feared—Reiterate Equal Weight," Wells Fargo, November 1, 2022.

Q. Why is it important to analyze equity research to determine a fair and reasonable allowed ROE for Confluence?

A. Analyzing this information is important because these professional investment analysts are the very individuals that underlie various consensus estimates widely considered by investors. ROR witnesses recognize the influence investment analysts have on utility stock prices by the very fact that they use consensus EPS forecasts for purposes of estimating the COE.

PROXY GROUP

Q. How did you approach selecting a custom water utility proxy group?

A. Due to the small number of publicly traded water utility companies in the United States, I chose to include most of the companies generally classified as water utility companies by Value Line. My proxy group consisted of the following six companies: American States Water Company, American Water Works Company, California Water Service Group, Essential Utilities,[26] Middlesex Water Company, and SJW Group. These are the same six companies Company witness Dylan W. D'Ascendis used for his cost of equity analysis. Although all of these companies have business risk profiles consistent with water and sewer utility operations, investment analysts do not provide financial metric estimates for Middlesex Water Company. Therefore, because I rely on investment analysts' projections for my multi-stage DDM analysis, I excluded Middlesex Water Company from this analysis. However, I included it in my Capital Asset Pricing Model ("CAPM") analysis.

[26] Although I chose not to exclude Essential Utilities from my proxy group, during my analysis I gave consideration to the fact that it is now a combination water and natural gas distribution utility. Before March 2020, Essential Utilities (f/k/a Aqua America) was primarily a regulated water utility company, but it acquired a sizeable amount of gas distribution assets when it bought Peoples Gas Company in March 2020.

MULTI-STAGE DCF/DDM

Q. How did you approach the multi-stage DCF/DDM analysis?

A. I used equity analysts' discrete DPS estimates for as many periods as they were available. Investors purchasing stocks in the water utility companies before the end of April 28, 2023 are entitled to the quarterly DPS declared for the second quarter of 2023. Therefore, I included this quarter's DPS as well as the expected quarterly DPS for the third and fourth quarter of 2023. For expected DPS for the annual periods from 2024 through 2027, I used equity analysts' projected discrete annual DPS estimates.

Q. How did you model the expected DPS for your proxy group for annual periods after the discrete stage?

A. I determined each company's estimated dividend payout ratio for the final year where a discrete annual DPS estimate was available, which was 2027. I then modeled an equal percentage change in the annual payout ratio from this period until the terminal year, which is when I assumed that all companies would converge to a dividend payout ratio necessary to ensure each company retained sufficient earnings to sustain the assumed perpetual growth rate of 3.75% to 4.25%. This growth rate and retention ratio assume allowed ROEs for water utility companies will eventually converge to no higher than 9.00% in the terminal stage, which is consistent with assumptions used by Wells Fargo and Evercore ISI.[27]

As shown in Schedule DM-D-10, my water utility industry COE estimates based on application of the multi-stage DCF (assuming a 4% perpetual growth rate) to the proxy group shows a COE in the range of 6.14% to 7.13% with a 6.52% average. As shown in Schedule DM-D-11, using a 3.75% perpetual growth rate results in a COE estimate in the range of 6.02% to 6.99% with an average of 6.38%. As shown in Schedule DM-D-12,

[27] Durgesh Chopra, et. al, "Initiating Coverage On Water Utilities: Top pick AWK (OP); AWR (UP); WTR/CWT/SJW/CTWS (IL)," Evercore ISI, September 17, 2018, p. 13. Neil Kalton, Sarah Akers, and Jonathan Reeder, "DDM Analysis Supports Sector Valuation & Quality/Growth Trade," Wells Fargo, August 19, 2019, p. 2.

using a 4.25% perpetual growth rate results in a COE estimate in the range of 6.48% to 7.50% with an average of 6.86%.

Q. How did you determine your assumed 3.75% to 4.25% perpetual growth rate for DPS?

A. This growth rate range is generally consistent with the following: (1) potential long-term sustainable growth rate of the U.S. economy,[28] (2) water utility industry fundamentals as it relates to expected ROEs on water utility rate base growth, and (3) commentary/analysis available from the investment community.[29] As it relates to fundamentals, a sustainable growth rate can be determined by multiplying an average long-term industry retention rate by an expected book ROE of approximately 9.00%, which is consistent with the terminal ROE used by Wells Fargo and Evercore ISI. [30] Assuming the water utility industry retains sufficient capital to ensure it doesn't have to access external equity markets, then it is reasonable to model an earnings per share ("EPS") retention rate of 44.44%, which applied to a 9.00% ROE, results in a perpetual growth rate of 4%.

Q. How does this compare to perpetual growth rates used by equity analysts to estimate fair prices for the broader utility industry?

A. These perpetual growth rates are higher than those typically used for other subsectors of the utility industry. Historically, the electric utility industry has had more variability in its construction cycles than the water utility industry. The water utility industry has a fairly visible and consistent need for high, incremental capital expenditures required to replace its continuously aging utility infrastructure. This explains why Wall Street analysts typically project 3 to 5-year compound annual growth rates ("CAGR") in EPS in the high

[28] www.cbo.gov/publication/57971, https://www.philadelphiafed.org/-/media/frbp/assets/surveys-and-data/livingston-survey/2022/livjun22.pdf, https://www.philadelphiafed.org/surveys-and-data/real-time-data-research/spf-q1-2022, https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20220921.pdf

[29] Neil Kalton, Sarah Akers, and Jonathan Reeder, "DDM Analysis Supports Sector Valuation & Quality/Growth Trade," Wells Fargo, August 19, 2019, p. 2; and Durgesh Chopra, et. al, "Initiating Coverage On Water Utilities: Top pick AWK (OP); AWR (UP); WTR/CWT/SJW/CTWS (IL)," Evercore ISI, September 17, 2018, p. 13.

[30] *Id.*

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single digits for the water utility industry. Because electric utility companies have frequent periods of varying capital expenditures, some companies may have low single-digit expected 3-to-5-year CAGR in EPS, but others, such as Ameren Corp, have expected 3-to-5-year CAGR in EPS of 6% to 8%.

Q. How do your current multi-stage COE estimates for the water utility industry compare to your multi-state DCF COE estimates for the water utility industry in MAWC rate cases since 2015?

A. My current multi-stage DCF COE estimate is approximately 25 basis points higher than my estimate in MAWC's rate case last year, Case No. WR-2022-0303; about the same as my multi-stage DCF COE estimate in MAWC's 2020 rate case, Case No. WR-2020-0344; about the same as Staff's multi-stage DCF COE estimate[31] in MAWC's 2017 rate case, Case Number WR-2017-0285;[32] and approximately 50 basis points lower than my multi-stage DCF COE estimates in 2015, Case No. WR-2015-0301.[33]

Q. Have you changed anything in your multi-stage DCF approach that may cause slight differences in your water utility industry COE estimates?

A. I refined my multi-stage approach starting in 2019 due to the fact that I gained access to more detailed analysts' estimates. I determined that I could use these more detailed estimates and more closely align the variables in the model with the assumptions underlying the constant-growth stage, which is the terminal stage of the model.

Q. Using the same multi-stage DCF approach you used prior to MAWC's 2020 rate case, what do the results imply about the changes in the water utility industry's COE since the 2015 MAWC rate case?

A. The water utility industry's COE declined by about 50 basis points between the 2015 and 2017 MAWC rate cases, but subsequent to that period, the COE for the water utility

[31] Although I did not directly sponsor Staff's testimony in this case, I supervised the individual, Jeffrey Smith, that sponsored Staff's testimony in this case.
[32] Case No. WR-2017-0285, Staff Cost of Service Report, Appendix 2, November 30, 2017.
[33] Case No. WR-2015-0301, Staff Cost of Service Report, Appendix 2, December 23, 2015.

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industry has remained relatively consistent in the 6.3% to 6.4% range. These steady results are logical considering the trends in the water utility industry's P/E ratios and dividend yields I discussed earlier in my testimony.

CAPM

Q. Did you use any other models to estimate the water utility peer group's cost of equity?

A. Yes, I used the capital asset pricing model ("CAPM"). The CAPM shows the specific impact of interest rates on the cost of capital. Although COE estimates can be manipulated with the CAPM by using unreasonable market risk premium estimates, there are a variety of authoritative sources that provide market risk premium estimates that can form the basis for a consensus view on a reasonable market risk premium based on current capital market conditions.

Q. What is the underlying theory that supports the use of the CAPM to estimate the cost of equity for utilities?

A. The CAPM is based on capital market theory in which it is recognized that although the total risk of a company and/or industry consists of market ("systematic") risk and asset/business-specific ("unsystematic") risk, investors are only compensated for systematic risk because holding a diversified portfolio allows the investor to avoid unsystematic risk. Systematic risks are unanticipated events in the economy, such as economic growth, changes in interest rates, demographic changes, etc., that affect almost all assets to some degree. The required risk premium for incurring the market risk as it relates to the investment/portfolio is determined by adjusting the market risk premium by the beta of the stock or portfolio. The adjusted risk premium is then added to a risk-free rate to determine the cost of equity. The CAPM is typically expressed in equation form as follows:

$$K_e = Rf + \beta\,(RP_m)$$

Where:
K_e = the cost of equity for a security;
Rf = the risk-free rate;
β = beta;
RP_m = market risk premium.

For purposes of my CAPM analysis, I relied on Kroll's (previously Duff & Phelps) recommended market risk premium of 6% provided as of October 18, 2022,[34] a range of realized historical market risk premiums of 4.95% (geometric historical mean for 1926 through 2022) to 6.38% (arithmetic historical annual mean for the period 1926 through 2022) derived from data provided by Ibbotson Associates' Stocks, Bonds, Bills and Inflation database. Although each of these market risk premium estimates use various methods and risk-free rates to arrive at their final estimates, I do not consider any estimate outside these to be consistent with the investment community's "consensus."

Q. What does the beta represent in a CAPM analysis?

A. Beta is statistically defined as the covariance of the returns on an asset (in this case an individual stock or group of stocks) with the return on the S&P 500 divided by the variance of the returns on the S&P 500. This statistical measure is intended to provide investors with insight regarding expected volatility and returns as it relates to the market. A beta of less than one implies less expected volatility than the market with the trade-off of a lower expected return than the market. The reverse is expected for a beta greater than one.

Q. What beta do you consider appropriate to estimate a standard COE for the water utility industry based on current market conditions?

A. Approximately 0.75.

[34] https://www.kroll.com/-/media/cost-of-capital/kroll-us-erp-rf-table-2022.pdf

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Q. Based on your CAPM analysis, what is the estimated COE for the water utility industry?

A. It is in the range of 8% to 8.25% (see Schedules DM-D-13 through DM-D-15).

Q. How do your current water utility CAPM COE estimates compare to your water utility CAPM COE estimates before the rapid increase in long-term risk-free rates in 2022?

A. My current CAPM COE estimates are over 200 basis points higher than my CAPM COE estimates of 5.5% to 6.0% for the water utility industry in 2020.[35]

Q. Why does the CAPM imply the water utility industries' COE has increased this significantly since 2020?

A. Because the CAPM uses interest rates as a direct input in estimating the COE. Because the average betas for the water utility industry are currently fairly similar to those in the 2020 rate case, the higher implied COE estimates are almost entirely attributed to higher long-term risk-free rates.

RULE OF THUMB (BOND YIELD PLUS GENERIC RISK PREMIUM)

Q. Are there any other simple reasonableness tests to apply to COE estimates derived from more complicated methods?

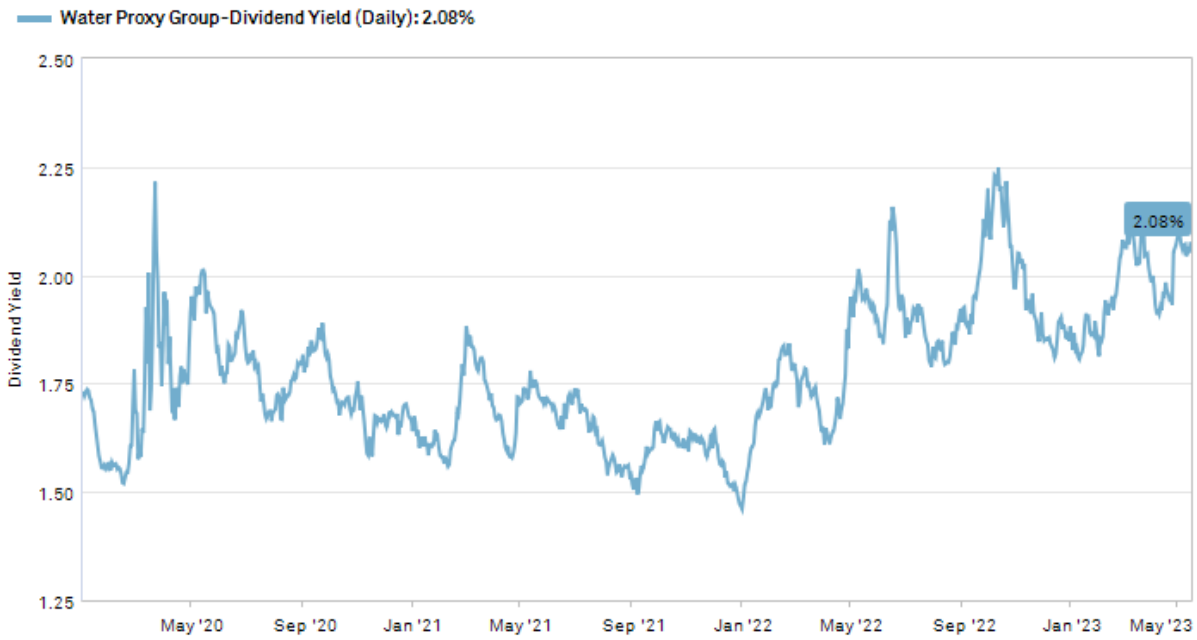
A. Yes. A simple rule of thumb contained in the Chartered Financial Analyst ("CFA") Program curriculum is to estimate the COE by adding 3% to 4% as a risk premium to a company's own bond yield.[36] This provides a fairly simple, but objective cost of equity. Being that the investment community views utility stocks as bond surrogates/substitutes, it is logical and reasonable to not add a risk premium any higher than 3% to the bond.

[35] Case No. WR-2020-0344, Murray Direct, Schedules DM-D-4 through DM-D-6.
[36] Pinto, Henry, Robinson and Stowe, "Equity Asset Valuation," Third Edition, 2015, pgs. 77-78.

Simply adding a 3% risk premium to a recent average YTM on BBB-rated and A-rated utility bonds provides a reasonableness check on more complicated COE methods. Adding 3% to a recent average BBB-rated and A-rated utility bond yields of approximately 5.25% to 5.55%, implies a COE of 8.25% to 8.55%. My current "rule of thumb" results imply that the water utility industry's COE has increased by around 240 basis points since 2020.

Q. What do changes in the water utility companies' dividend yields imply about the reliability of the current bond yield plus risk premium estimates?

A. They are overestimating changes in the COE. The below graph shows changes in all of the water utility companies' dividend yields since 2020:



Even at a recent peak of around 2.25% in late September to early October of 2022 the maximum potential increase in the water utility industry's COE is approximately 50 basis points since late summer/early fall of 2020. After factoring in the recent decline in water utility dividend yields to around 2.1%, the spread between average recent dividend yields to those in late summer/early fall of 2020 is closer to around 35 basis points.

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RECOMMENDED AUTHORIZED ROE

Q. Based on your analysis and understanding of the water utility industry's current COE, investor expectations on allowed ROEs and the COE for water utilities compared to electric and natural gas utilities, what would be a fair and reasonable allowed ROE in this case?

A. 9.25% to 9.90%. Because my DCF COE estimates for the water utility industry imply a lower COE than for the electric and local natural gas distribution utility industries, a comparatively lower authorized ROE would be justified. However, as I indicated earlier, I recommend a 65 basis points company-specific premium for Confluence so rather than recommending a 9% ROE as I did in the MAWC rate case, I recommend a 9.65% ROE.

SUMMARY AND CONCLUSIONS

Q. Can you summarize your main conclusions and views as it relates to an authorized ROR in this case?

A. Yes. I recommend an ROE of 9.65% be applied to a 45% common equity ratio for purposes of setting Confluence's authorized ROR. I recommend a 6.23% cost of debt be applied to the remaining 55% of capital in my recommended capital structure (*see* Schedule DM-D-16).

While many of the systems Confluence acquired required significant capital investment to ensure safe and reliable service, the realized financial results related to the systems that have received rate relief demonstrate remarkably steady returns. While CSWR made arguments several years ago that it needed to be authorized high RORs due to higher amounts of business risk related to its investments, experience has proved otherwise. The attractiveness of CSWR's investments resulted in the new owner, Sciens Capital, paying a significant premium for the opportunity to commit more capital to acquiring and investing in small water and sewer systems. While this investment model has certainly been beneficial to utility customers by ensuring safe and reliable utility service and environmental integrity, the ROR allowed for this investment should be commensurate

with the demonstrated risk profile of past investments. The customers of Confluence's legacy systems shouldered the burden of much higher rates because of this perceived higher risk. It is only fair to ensure that they are charged for a much more reasonable ROR in this case.

Q. Does this conclude your testimony?

A. Yes.

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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Confluence Rivers Utility Operating Company, Inc.'s Request for Authority to Implement a General Rate Increase for Water Service and Sewer Service Provided in Missouri Service Areas	)))))	Case No. WR-2023-0006

AFFIDAVIT OF DAVID MURRAY

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

David Murray, of lawful age and being first duly sworn, deposes and states:

1. My name is David Murray. I am a Utility Regulatory Manager for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my direct testimony.

3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.

David Murray
Utility Regulatory Manager

Subscribed and sworn to me this 25th day of May 2023.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

TIFFANY HILDEBRAND
My Commission Expires
August 8, 2023
Cole County
Commission #15637121

Tiffany Hildebrand
Notary Public

My Commission expires August 8, 2023.