# Exhibit No. 8

Confluence Rivers – Exhibit 8
D'Ascendis Rebuttal
File No. WR-2023-0006

Exhibit No. _____
Issue: Cost of Capital
Witness: Dylan W. D'Ascendis
Type of Exhibit: Rebuttal Testimony
Sponsoring Party: Confluence Rivers
Case No.: WR-2023-0006/SR-2023-0007
Date: June 29, 2023

BEFORE THE

MISSOURI PUBLIC SERVICE COMMISSION

# REBUTTAL TESTIMONY

OF

DYLAN W. D'ASCENDIS
PARTNER
SCOTTMADDEN, INC.

ON BEHALF OF

CONFLUENCE RIVERS UTILITY OPERATING COMPANY, INC.

June 29, 2023

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## I. INTRODUCTION

**Q. Please state your name and business address.**

A. My name is Dylan W. D'Ascendis. I am employed by ScottMadden, Inc. as Partner. My business address is 3000 Atrium Way, Suite 200, Mount Laurel, NJ 08054.

**Q. Are you the same Dylan W. D'Ascendis who provided direct testimony in this matter?**

A. Yes.

## II. PURPOSE OF TESTIMONY

**Q. What is the purpose of your rebuttal testimony in this proceeding?**

A. The purpose of my rebuttal testimony is to respond to the direct testimonies of Mr. Christopher C. Walters, who testifies on behalf of the Staff ("Staff") of the Missouri Public Service Commission (the "Commission"); and Mr. David Murray, who testifies on behalf of the Office of the Public Counsel ("OPC") (collectively the "Opposing Witnesses"), as they relate to Confluence Rivers Utility Operating Company, Inc.'s ("Confluence Rivers", "Confluence", or the "Company") requested return on common equity ("ROE") on its Missouri jurisdictional rate base and ratemaking capital structure.

## III. SUMMARY AND OVERVIEW

**Q. Please summarize the key issues that you address in your rebuttal testimony.**

A. My rebuttal testimony responds to Mr. Walters' interpretation of current capital markets and the errors embedded in his assumptions. I then respond to the Opposing Witnesses' substantive recommendations and their application of the analytical models in their respective direct testimonies. For example, Mr. Walters

and Mr. Murray both include multi-stage versions of the DCF model, which results in unreasonably low ROE estimates. My rebuttal testimony discusses those factors in detail, as well as other issues specific to each of their testimonies.

**Q. Have you prepared schedules in support of your recommendation?**

A. Yes. Included in my rebuttal testimony are Schedules DWD-R-1 through DWD-R-7, which were prepared by me or under my direction.

**Q. How is the remainder of your Rebuttal Testimony organized?**

A. The remainder of my rebuttal testimony is organized as follows:

- Section IV – Provides my response to Staff Witness Walters;
- Section V – Provides my response to OPC Witness Murray; and
- Section VI – Presents my conclusions.

## IV. RESPONSE TO STAFF WITNESS WALTERS

**Q. Please summarize Mr. Walters' recommendation regarding Confluence's ROE.**

A. Mr. Walters recommends an ROE of 9.50%, within a range of 9.20% to 9.80%.[1] Mr. Walters sets his recommendation by reference to: (1) DCF models (ranging from 8.91% to 9.65%);[2] (2) his RPM (ranging from 9.63% to 10.25%);[3] and (3) his CAPM analyses (ranging from 8.16% to 10.47%).[4] Mr. Walters' 9.50% recommendation is the midpoint of his range; the low end is set by reference to his

1 Walters Direct Testimony, at 3.
2 *Ibid*., at 39, Table CCW-8. Mr. Walters also estimates a multi-stage DCF model, which produces median and average results of 7.43% and 7.37%, respectively. Mr. Walters determines that "a reasonable ROE based on [the DCF results summarized in Table CCW-8] is 9.20%." As such, it appears he gives the greatest weight to his constant growth DCF results based on analysts' growth rates and sustainable growth rates, applied to his Total Proxy Group.
3 *Ibid*., at 43, Table CCW-9.
4 *Ibid*., at 52, Table CCW-11.

DCF-based estimate (9.20%), and the high end set by reference to his RPM-based estimate (9.80%).[5]

**Q. What are the areas of disagreement between you and Mr. Walters?**

A. The principal areas in which I disagree with Mr. Walters include: (1) his conclusion that interest rates are relatively low; (2) his conclusion that utilities have robust valuations relative to the market; (3) his interpretation of authorized returns for water companies as it relates to the Company; (4) his interpretation of S&P credit ratings for utility companies; (5) his recommended capital structure; (6) his inclusion of the gas companies in his utility proxy group; (7) specific inputs to his DCF model; (8) the assumptions and methods underlying his RPM; (9) specific assumptions and inputs to his CAPM; and (10) his decision to not reflect any Company-specific risks in his recommendation.

**Q. Mr. Walters characterizes capital costs as "relatively low."[6] Do you agree with Mr. Walters' characterization?**

A. Not necessarily. Mr. Walters does not define the timeframe. On April 7, 2023, the spot date of Mr. Walters' analyses, the yield of 30-year Treasury Bonds was 3.61%. Prior to the onset of the COVID-19 Pandemic, and the more recent increase in interest rates, the last time the 30-year Treasury yield was at that level was April 3, 2014, when it stood at 3.62%. While interest rates are lower than long-term historical averages, I would not consider them "relatively low" compared to levels experienced over the last decade.

[5] *Ibid*., at 52, Table CCW-12.
[6] *Ibid*., at 16.

**Q. Does Mr. Walters' review of return data for utility stocks and market indices since the second quarter of 2021 provide an adequate timeframe to determine whether utility stocks have robust valuations relative to the market?**

A. No. Mr. Walters does not use an adequate timeframe to measure that relationship. As shown on Schedule DWD-R-1, for the timeframe encompassing the COVID-19 pandemic through April 7, 2023, utility stocks, as measured by Mr. Walters' Total Proxy Group, are more volatile as measured by annualized volatility[7] and perform worse than the S&P 500. This combination (high volatility and low returns) is not indicative of "robust valuations" relative to the market.

**Q. Mr. Walters states that over the last few years "the majority of authorized ROEs since 2016 have been below 9.7%, with many of those being below 9.5%."[8] Is that true for water utilities?**

A. No, it is not. As shown on Mr. Walters' Table CCW-1, in five of seven years the majority of authorized ROEs were over 9.7%, not below it.

**Q. Are historical authorized ROEs in other regulatory jurisdictions reasonable benchmarks for the cost of equity for Confluence at this time?**

A. No. While historical authorized ROEs from other jurisdictions may be reasonable benchmarks of acceptable ROEs, they do not reflect the current cost of common equity. The reason why historical authorized returns do not reflect the investor-required return is because authorized ROEs are a lagging indicator of investor-required returns, i.e., authorized ROEs are based on market data presented in an

[7] Annualized volatility equals the standard deviation of returns over the period multiplied by the square root of 252, or the approximate number of trading days in a year.

[8] *Ibid.*, at 6.

evidentiary record, which spans a period before the decision, lasting over a year in some cases. Simply put, historical authorized returns would not be informative as to the current investor-required return because the economic conditions in the past are not representative of economic conditions now.

**Q. Even if historical authorized ROEs were relevant benchmarks for an ROE for water utilities, generally, is the Regulatory Research Associates ("RRA") data a complete data set?**

A. No, it is not. RRA currently evaluates water utility regulation in only 25 state jurisdictions and only monitors rate proceedings involving rate change requests of $0.5 million or greater for the 13 largest investor-owned and privately held water utilities.

**Q. Do you agree with Mr. Walters' statement that Confluence Rivers would not be rated much differently than the proxy group? [9]**

A. No, I do not. As discussed by Company witnesses Cox and Freeman, the operating risks of Confluence Rivers are significantly different than other traditional water companies. This risk differential is apparent as the Company has limited (i.e., one) options to issue debt capital, whereas other utilities have more.

**Q. Has this difference between Confluence Rivers and other utilities been reflected by this Commission in the past?**

A. Yes, it has. In February 2018, in File No. WR-2017-0259 concerning Indian Hills Utility Operating Company, Inc., the Commission approved an ROE of 12.00%.[10] Three months later, the Commission approved an ROE of between 9.5% and

[9] *Ibid*., at 22.
[10] Report and Order, pp. 63-66, MoPSC File No. WR-2017-0259 (issued February 7, 2018).

10.0% for Missouri-American Water Company.[11] In view of the above, the Commission should ignore Mr. Walters' comments regarding authorized returns, as they are inaccurate relative to water utilities, do not include a full data set, and do not reflect the unique risks of the Company.

**Q. Mr. Walters states that utility companies have been able to maintain their credit quality despite declining authorized ROEs.[12] Do you agree?**

A. No, I do not. Although Mr. Walters' statements regarding a supportive credit environment for utilities sounds reasonable, a closer look reveals that not to be the case. For example, in January of 2023, S&P noted:

> The industry outlook remains negative and has been negative since early 2020. Over this timeframe downgrades have outpaced upgrades by more than 3:1 (see chart 8). While the industry's percentage of negative outlooks has decreased to about 15% from 35% at year-end 2020, prolonged inflationary risks or a deeper-than-expected recession could harm the industry's credit quality in 2023.[13]

Mr. Walters' Table CCW-3 proves this to be reality. While Mr. Walters states that the credit ratings of the natural gas utility industry have improved significantly since 2009, there is significant downward movement in natural gas utility credit ratings. As shown in Table 1, below (and in Mr. Walters Table CCW-3), the number of natural gas utilities rated A or higher has decreased, while the number of BBB and BBB+ rated natural gas utilities has increased. That shift toward lower credit ratings indicates a deteriorating credit environment for the utility industry, and consequently increases overall investment risk.

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11 Source: Regulatory Research Associates.
12 Walters Direct Testimony, at 8.
13 S&P Global Ratings, Industry Top Trends, "North America Regulated Utilities", January 23, 2023, at 4.

**Table 1: Natural Gas Utility Credit Ratings[14]**

| Rating | 2020 | 2022 |
|---|---|---|
| A or higher | 38% | 15% |
| A- | 38% | 38% |
| BBB+ | 13% | 30% |
| BBB | 13% | 18% |
| BBB- | 0% | 0% |

This is consistent with an S&P report that Mr. Walters cites on page 16 of his Direct Testimony and is excerpted above.

**Q. Mr. Walters appears to link the stable outlook for regulated utilities to increased levels of capital expenditures.[15] Please comment.**

A. Mr. Walters' primary point is that the levels of capital expenditures are "capital investments" and are "enhancing shareholder value," which regulatory commissions must take into consideration in setting rates of return.[16] But Mr. Walters takes a singular view of the issue, which is too narrow. First, utilities invest in capital to maintain safe and reliable service to their customers and are normally subject to prudence reviews by their regulators. If the investments were not used and useful, the utility would not be able to earn a return of and on those investments. Second, as noted above, the outlook for regulated utilities was not as robust as Mr. Walters contends. Finally, the financial community carefully monitors the current and expected financial conditions of utility companies, as well as the regulatory environment in which those companies operate. In that respect, the regulatory environment is one of the most important factors considered in both

14 Walters Direct Testimony, at 8, Table CCW-3.
15 *Ibid*., at 8-10.
16 *Ibid*., at 10.

debt and equity investors' assessments of risk.[17] That is especially important during periods in which the utility expects to make significant capital investments and, therefore, may require access to capital markets.

**Q. Do credit rating agencies recognize risk associated with increased capital expenditures?**

A. Yes, they do. From a credit perspective, the additional pressure on cash flows associated with high levels of capital expenditures exerts corresponding pressure on credit metrics and, therefore, credit ratings. S&P has noted several long-term challenges for utilities' financial health, including: heavy construction programs to address demand growth; declining capacity margins; aging infrastructure; and regulatory responsiveness to mounting requests for rate increases.[18] More recently, S&P noted:

> We assume that capital spending will remain a focus of most utility managements and strain credit metrics. It provides growth when sales are diminished by ongoing demanded efficiency from regulators and other trends, and it is welcomed by policymakers that appreciate the economic stimulus and the benefits of safer, more reliable service. The speed with which the regulatory process turns the new spending into higher rates to begin to pay for it is an important factor in our assumptions and the forecast. Any extended lag between spending and recovery can exacerbate the negative effect on credit metrics and therefore ratings.[19]

The rating agency views noted above also are consistent with certain observations: (1) the benefits of maintaining a strong financial profile are significant when capital access is required and become particularly acute during periods of market

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17 Moody's Investor Service, Rating Methodology, *Regulated Electric and Gas Utilities*, June 23, 2017; and Standard & Poor's, *Utilities: Assessing U.S. Utility Regulatory Environments*, November 15, 2011.

18 Standard & Poor's, Industry Report Card: Utility Sectors in the Americas Remain Stable, While Challenges Beset European, Australian, and New Zealand Counterparts, RatingsDirect, June 27, 2008, at 4.

19 Standard & Poor's, *Industry Top Trends 2017: Utilities*, RatingsDirect, February 16, 2017, at 4.

instability; and (2) the Commission's decision in this proceeding will have a direct bearing on the Company's credit profile and its ability to access the capital needed to fund its investments.

## A. CAPITAL STRUCTURE

**Q. Please summarize Mr. Walters' position regarding the Company's capital structure.**

A. Mr. Walters' position is that the Company's proposed equity ratio of 68.56% exceeds the ratios of the proxy group, and therefore he proposes a hypothetical capital structure containing no more than 50.00% equity.[20] If the Commission authorizes the Company's proposed capital structure, he then recommends an ROE in the lower half of his recommended range.[21]

**Q. Do you agree with Mr. Walters' recommendation regarding the Company's proposed capital structure?**

A. Generally, yes. As noted in my direct testimony, I make an adjustment to account for the Company's lesser degree of financial risk relative to Utility Proxy Group, which resulted in a downward adjustment of 0.51%.[22] As such, I agree with Mr. Walters' that the Company's reduced level of financial risk needs to be accounted for. However, I disagree with Mr. Walters' position that an imputed capital structure should contain no more than 50.00% equity. As shown on Exhibit CCW-2, the common equity ratios for water-only utilities range from 47.50% to 62.10%.[23] Given the common equity ratios maintained by water utilities, and the Company's

20 Walters Direct Testimony, at 25.
21 *Ibid.*, at 28.
22 D'Ascendis Direct Testimony, at 52-55.
23 Based on data from S&P Global Market Intelligence.

actual common equity ratio, a ratio at the top of the range is reasonable and correctly adjusts for differences in financial risk. An equity ratio of 50.00%, however, incorrectly adjusts Confluence River's common equity ratio beyond a level reflective of its operations, and those of similarly operated water utilities.

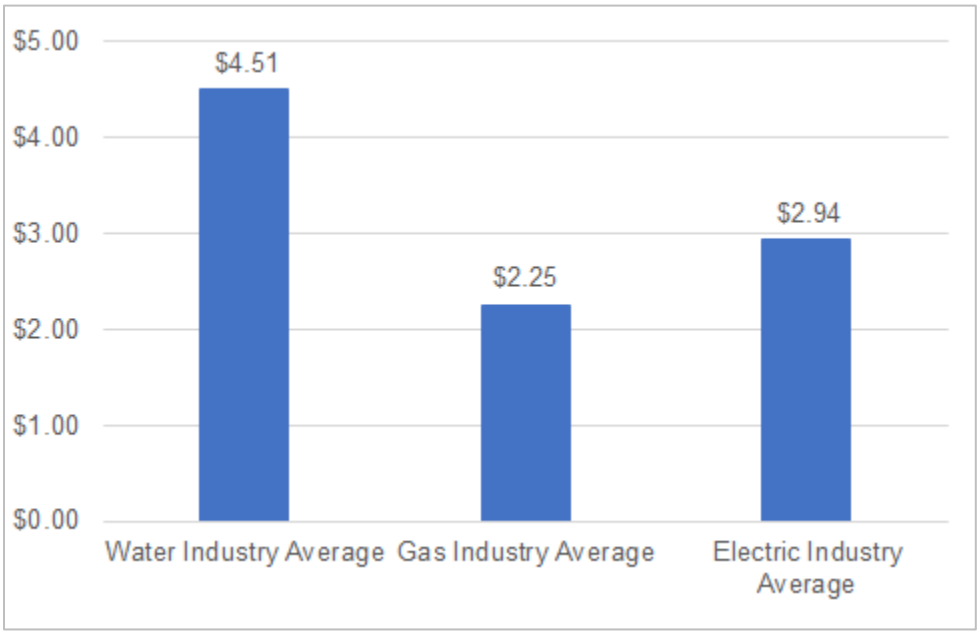
## B. PROXY GROUP

**Q. Is it proper for Mr. Walters to use a gas proxy group to determine an ROE for a water utility?**

A. No, it is not. As stated in my Direct Testimony at pages 9-11, water and wastewater utilities have specific risks not borne by gas or electric companies. For example, water is the only utility service that you ingest. As such, water utilities have an ever-increasing responsibility to be stewards of the environment from which supplies are drawn in order to preserve and protect essential resources of the United States. This increased environmental stewardship is a direct result of the compliance with the Safe Drinking Water Act and response to the continuous monitoring of the water supply by the Environmental Protection Agency, state governments, and local governments for potential contaminants and their resultant regulations. Because of this, water utilities' risk profiles are distinct from gas and electric utilities. As an example, even though all utilities are generally capital intensive,[24] water utilities are overwhelmingly more capital intensive than the gas and electric industries as shown on Chart 1, below:

[24] Capital intensity is how many dollars of net plant is required to generate one dollar of revenue.

**Chart 1: Capital Intensity of the Water, Gas, and Electric Utility Industries[25]**



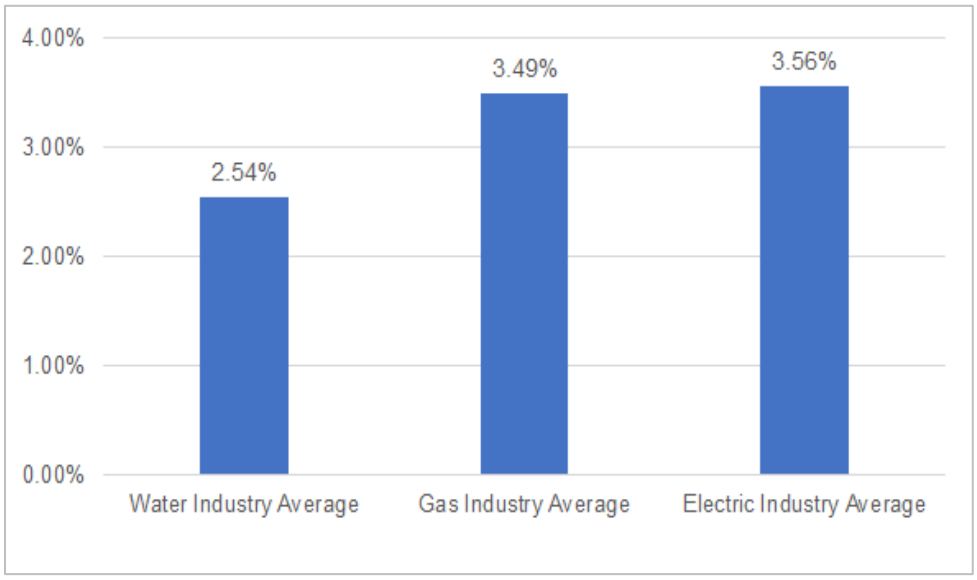

In addition to its capital-intensive nature, the water and wastewater industry also experiences low depreciation rates. Depreciation rates are one of the principal sources of internal cash flows for all utilities (through a utility's depreciation expense) and are vital for a company to fund ongoing replacements and repairs of water and wastewater systems. Water/wastewater utility assets have long lives, and therefore have long capital recovery periods. As such, they face greater risk due to inflation, which results in a higher replacement cost per dollar of net plant. Simply, capital that is retiring today will need to be replaced with capital which is significantly more expensive.

As shown on Chart 2, below, water utilities experienced an average depreciation rate of 2.54% for 2022. In contrast, in 2022, the natural gas and electric utilities experienced average depreciation rates of 3.49% and 3.56%,

[25] Sources of Information: S&P Capital IQ and Company Form 10-K.

respectively. Low depreciation rates signify that the pressure on cash flows remains significantly greater for water utilities than for other types of utilities.

**Chart 2: Depreciation Rates of the Water, Gas, and Electric Utility Industries**[26]




**Q. Are you aware of any gas utility proceedings that Mr. Walters was a party to where he used a water utility proxy group in addition to a gas proxy group for insight into the investor-required return?**

A. No. If it is Mr. Walters' contention that water and gas utilities are similar in risk, one would think that he would have used both water and gas proxy groups regardless of it was a gas or a water proceeding.[27] But to my knowledge he has not done so.

[26] S&P Capital IQ, Company SEC Form 10-Ks.
[27] Docket No. 23-0067, Illinois Commerce Commission, Ameren Illinois Company, Direct Testimony and Exhibits of Christopher C. Walters (May 5, 2023).

**Q. What are your conclusions regarding Mr. Walters' use of gas utilities in his proxy group?**

A. Given that the water utility industry has unique operating risks compared to gas companies, only water companies should be considered by the Commission for determining an ROE for a water company.

## C. DISCOUNTED CASH FLOW MODEL

**Q. Please summarize Mr. Walters' DCF analyses.**

A. Mr. Walters uses three DCF models; a constant growth DCF; a sustainable growth DCF, and a multi-stage DCF, all using price data for the 13-week period ending April 7, 2023. For his projected three- to five-year Earnings per Share (EPS) growth rates, Mr. Walters uses Zacks, S&P Capital IQ Market Intelligence, and Yahoo! Finance; *Value Line Investment Survey ("Value Line")* for his sustainable growth rates; and uses *Blue Chip* for the terminal growth rate in his multi-stage DCF.[28] Using these inputs, he derives indicated ROEs of 9.65% for the constant growth DCF model, 8.91% for the sustainable growth DCF model, and between 7.37% and 7.43% for his multi-stage DCF model, based on his Total Proxy Group. From these results, Mr. Walters concludes that the indicated DCF model result is 9.20%.[29] Mr. Walters also calculates the results solely based on the water utilities within his proxy group. I have presented those results in Table 2 as well as those for his Total Proxy Group.

[28] Walters Direct Testimony, at 29-33.
[29] *Ibid.*, at 38.

**Table 2: Mr. Walters DCF Results**[30]

| | Total Proxy Group | | Water Utilities | |
|---|---|---|---|---|
| **Description** | **Average** | **Median** | **Average** | **Median** |
| Constant Growth DCF Model (Analysts' Growth) | 9.65% | 9.65% | 9.53% | 9.45% |
| Sustainable Growth DCF Model | 8.91% | 8.91% | 7.79% | 7.62% |
| Multi-Stage DCF Model | 7.37% | 7.43% | 6.50% | 6.69% |

As shown in Table 2, Mr. Walters' DCF results for the water utilities based on the sustainable growth rate and the multi-stage DCF model are extremely unreasonable. As discussed below, I have several concerns with those approaches and their applicability to water utilities, and utilities in general, which is subsequently corroborated by the results they produce.

**Q. Do you have any concerns with Mr. Walters' application of the DCF model?**

A. Yes, I do. I have several concerns, including: (1) his consideration of Middlesex Water Company's ("MSEX") indicated constant growth DCF result; (2) his exclusion of *Value Line* projected EPS growth rates; (3) his use of a sustainable growth rate; and (4) his use of a multi-stage DCF model. I will address these concerns in turn, below.

**Q. What is your concern with Mr. Walters' indicated DCF cost rate for MSEX?**

A. Mr. Walters calculates an indicated DCF cost rate for MSEX of 4.29%, which is below the 13- (5.25%) and 26-week (5.43%) historical A-rated utility bond yields used by Mr. Walters in his analysis. As stated in my Direct Testimony at pages 24-25, this violates the basic financial principle of risk and return, namely that investors require greater returns for bearing greater risk. It is generally accepted that common equity capital has greater investment risk than debt capital, as

30 *Ibid*., at 39, Table CCW-8.

common equity shareholders are behind debt holders in any claim on a company's assets and earnings. Because of this, any investor required return on equity below the marginal yield on long term debt related to that particular stock is nonsensical and should not be considered.

**Q. What are the results of Mr. Walters' Constant Growth DCF model after excluding MSEX's indicated result?**

A. Table 3 presents Mr. Walters' as-filed constant growth DCF results, excluding MSEX, and the average of both the results including and excluding MSEX.

**Table 3: Mr. Walters' Constant Growth DCF Results Adjusted for Middlesex Water Company's Indicated Result[31]**

| | Total Proxy Group | | Water Utilities | |
|---|---|---|---|---|
| **Description** | **Average** | **Median** | **Average** | **Median** |
| Mr. Walters DCF Results | 9.65% | 9.65% | 9.53% | 9.45% |
| DCF Results excl. Middlesex Water | 10.10% | 9.80% | 10.58% | 9.95% |
| Indicated DCF Results | 9.88% | 9.73% | 10.06% | 9.70% |

As noted in my direct testimony, because the indicated results still give MSEX DCF result consideration, it should be viewed as extremely conservative.[32]

**Q. Did Mr. Walters use projected EPS growth rates from *Value Line* in his DCF analysis?**

A. No. Even though Mr. Walters used *Value Line* data in a plethora of analyses, including the use of *Value Line* betas in his CAPM analysis and annualized dividends in his DCF model analysis, Mr. Walters did not use the projected EPS growth rates for his DCF model analysis. Excluding relevant information is inconsistent with the Efficient Market Hypothesis (EMH). According to Eugene F.

31 *Ibid*., Table CCW-8, Schedule DWD-R-2, page 1.
32 D'Ascendis Direct Testimony, at 25.

Fama,[33] a market in which prices always "fully reflect" available information is called "efficient." There are three forms of the EMH, namely:

- The "weak" form asserts that all past market prices and data are fully reflected in securities prices. In other words, technical analysis cannot enable an investor to "outperform the market."
- The "semi-strong" form asserts that all publicly available information is fully reflected in securities prices. In other words, fundamental analysis cannot enable an investor to "outperform the market."
- The "strong" form asserts that all information, both public and private, is fully reflected in securities prices. In other words, even insider information cannot enable an investor to "outperform the market."

The "semi-strong" form is generally considered the most realistic because the illegal use of insider information can enable an investor to "beat the market" and earn excessive returns, thereby disproving the "strong" form. The semi-strong form of the EMH assumes that all information (including widely available projected EPS growth rates, such as those from *Value Line*) are available to the investor, which means it would be considered by investors when making investment decisions and, therefore, should be included in Mr. Walters' DCF analysis.

**Q. What would Mr. Walters' constant growth DCF model results be if he included the *Value Line* projected EPS growth rates in his analysis?**

A. Including *Value Line* growth rates in Mr. Walters' constant growth DCF model based on analysts' growth rates produces average and median results of 9.54%

[33] Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, The Journal of Finance, Vol. 25, No. 2. (May 1970), at 383-417.

and 9.29%, respectively.[34] The average and median results based on the water utility proxy group are 8.97% and 8.98%.

**Q. What would the indicated constant growth DCF results be after including *Value Line* projected EPS growth rates, both including and excluding MSEX DCF results?**

A. The average and median constant growth DCF results both including and excluding MSEX's result are 9.71% and 9.44%, respectively, for Mr. Walters' Total Proxy Group, and 9.32% and 9.13%, respectively, for the water utilities.

**Table 4: Mr. Walters' Constant Growth DCF Results Using Value Line Projected EPS and Adjusted for Middlesex Water Company's Indicated Result[35]**

| | Total Proxy Group | | Water Utilities | |
|---|---|---|---|---|
| **Description** | **Average** | **Median** | **Average** | **Median** |
| DCF Results incl. Middlesex Water | 9.54% | 9.29% | 8.97% | 8.98% |
| DCF Results excl. Middlesex Water | 9.88% | 9.60% | 9.67% | 9.29% |
| Indicated DCF Results | 9.71% | 9.44% | 9.32% | 9.13% |

**Q. Do you agree with Mr. Walters' consideration of sustainable growth rates in his constant growth DCF analysis?**

A. No, I do not. Morin[36] discusses the sustainable growth model and shows that it relies on knowledge of several factors, including:

- "b": the fraction of earnings per share retained;
- "r": the rate of return on equity (ROE);
- "s": the growth rate in common equity due to the sale of stock; and

34 Schedule DWD-R-2, page 2.
35 *Ibid.*
36 Roger A. Morin has taught as the Distinguished Professor of Finance for Regulated Industry at the Center for the Study of Regulated Industry at Georgia State University, the Wharton School of Finance at the University of Pennsylvania, the Amos Tuck School of Business at Dartmouth College, Drexel University, and McGill University, among others. He has authored or co-authored articles published in academic journals on the subject of finance, including *The Journal of Finance*, *The Journal of Business Administration*, and *International Management Review*.

- "v": the fraction of a stock sale that increases existing book value.

Specifically, Morin states the following:

There are three problems in the practical application of the sustainable growth method:

(1) It may be even more difficult to estimate what b, r, s and v investors have in mind than it is to estimate what g they envisage. It would appear far more economical and expeditious to use available growth forecasts and obtain g directly instead of relying on four individual forecasts of the determinants of such growth. *It seems only logical that the measurement and forecasting errors inherent in using four different variables to predict growth far exceed the forecasting error inherent in a direct forecast of growth itself.*

*(2) There is an element of circularity in estimating g by a forecast of b and ROE for the utility being regulated, since ROE is determined in large part by regulation. To estimate what ROE resides in the minds of investors is equivalent to estimating the market's assessment of the outcome of regulatory hearings.* Expected ROE is exactly what regulatory commissions set in determining an allowed rate of return. In other words, the method requires an estimate of ROE before it can even be implemented. *Common sense would dictate the inconsistency of a return on equity recommendation that is different than the expected ROE that the method assumes the utility will earn forever.*

For example, using an expected return on equity of 11% to determine the growth rate and using that same growth rate to recommend a return on equity of 9% is inconsistent. *It is not reasonable to assume that this regulated utility company is expected to earn 11% forever, but estimate a 9% return on equity. The only way this utility can earn 11% is that rates be set by the regulator so that the utility will in fact earn 11%....*

*(3)* The empirical finance literature discussed earlier demonstrates that the sustainable growth method of determining growth is not as significantly correlated to measures of value, such as stock price and price/earnings ratios, as other historical growth measures or analysts' growth forecasts. *Other proxies for growth, such as historical growth rates and analysts' growth forecasts,*

*outperform retention growth estimates. (emphasis added)*[37]

The circular nature of the sustainable growth DCF is illustrated in the following steps:

1. The sustainable growth rate relies on an expected ROE on book common equity;
2. That expected ROE on book common equity is then used in a DCF analysis to establish an ROE cost rate related to the market value of the common stock; and
3. That market-related ROE, if authorized as the allowed ROE in a regulatory proceeding, becomes the expected ROE on book common equity.

Put simply, the estimated ROEs Mr. Walters used to derive his sustainable growth rate become the regulatory outcome of this proceeding, even as those ROEs are themselves based on regulatory outcomes.

The sustainable growth rate is inherently circular as applied to utilities and its use is counter to both academic and empirical evidence.

**Q. Do you have any other concerns with the use of the sustainable growth rate as a measure of long-term growth?**

A. Yes. The sustainable growth rate assumes increasing retention ratios necessarily are associated with increasing future growth. The underlying premise is that future earnings will increase as the retention ratio increases. That is, if future growth is modeled as “b x r” (where “b” is the retention ratio and “r” is the earned return on

[37] Roger A. Morin, Modern Regulatory Finance, Public Utilities Reports, Inc., 2021 (“Morin”), at 383-384.

book equity), growth will increase as "b" increases. There are several reasons, however, why that may not be the case. Consequently, independent research does not support the assumption that higher earnings retention ratios necessarily are associated with higher future earnings growth rates.

**Q. Is there independent research supporting the finding that future earnings and the retention ratio are not positively related?**

A. Yes. In 2006, for example, two articles in Financial Analysts Journal addressed the theory that high dividend payouts (i.e., low retention ratios) are associated with low future earnings growth.[38] Both articles cite a 2003 study by Arnott and Asness[39], who found that, over the course of 130 years of data, future earnings growth is associated with high, rather than low, payout ratios. In essence, the findings of all three studies found that there is a negative, not a positive, relationship between the two.

**Q. Do the results of the independent research make practical sense?**

A. Yes, they do. As a practical matter, dividend-paying companies (such as utilities) are reluctant to reduce dividends, given the often-disproportionate stock price reaction. Consequently, a higher than expected dividend increase may signal management's confidence in higher future earnings and cash flow. That is, a near-term reduction in the retention ratio supporting a higher dividend increase may provide information or "signaling" content regarding future growth prospects.[40] In

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38 *See*, Ping Zhou, William Ruland, Dividend Payout and Future Earnings Growth, Financial Analysts Journal, Vol. 62, No. 3, 2006. See also, Owain ap Gwilym, James Seaton, Karina Suddason, Stephen Thomas, International Evidence on the Payout Ratio, Earnings, Dividends and Returns, Financial Analysts Journal, Vol. 62, No. 7, 2006.

39 *See*, Robert Arnott, Clifford Asness, Surprise: Higher Dividends = Higher Earnings Growth, Financial Analysts Journal, Vol. 59, No. 1, January/February 2003

40 *See,* Eugene F. Brigham, Louis C. Gapenski, Financial Management, Theory and Practice, Seventh Ed., 1994, at 618.

view of the foregoing, Mr. Walters' use of a sustainable growth rate DCF analysis is an exercise in circularity which ignores the basic principle of rate base/rate of return regulation.

**Q. Is Mr. Walters' multi-stage DCF model a reasonable approach to estimating the Company's ROE?**

A. No, it is not. The multi-stage DCF model and its growth rates reflect the company/industry lifecycle, which is typically described in three stages: (1) the growth stage, which is characterized by rapidly expanding sales, profits, and earnings. In the growth stage, dividend payout ratios are low in order to grow the firm; (2) the transition stage, which is characterized by slower growth in sales, profits, and earnings. In the transition stage, dividend payout ratios increase, as their need for exponential growth diminishes; and (3) the maturity (steady-state) stage, which is characterized by limited, slightly attractive investment opportunities, and steady earnings growth, dividend payout ratios, and returns on equity.

**Q. Are there examples in basic finance texts that support your position?**

A. Yes. For example, in *Investments*, life cycles and multi-stage growth models are discussed:

> As useful as the constant-growth DDM (dividend discount model) formula is, you need to remember that it is based on a simplifying assumption, namely, that the dividend growth rate will be constant forever. In fact, firms typically pass through life cycles with very different dividend profiles in different phases. In early years, there are ample opportunities for profitable reinvestment in the company. Payout ratios are low, and growth is correspondingly rapid. In later years, the firm matures, production capacity is sufficient to meet market demand, competitors enter the market, and attractive opportunities for reinvestment may become harder to find. In this mature phase, the firm may choose to increase the dividend payout ratio, rather than retain earnings. The dividend level increases, but

> thereafter it grows at a slower pace because the company has fewer growth opportunities.
>
> Table 18.2 illustrates this pattern. It gives Value Line's forecasts of return on assets, dividend payout ratio, and 3-year growth in earnings per share for a sample of the firms in the computer software industry versus those of east coast electric utilities…
>
> By in large, the software firms have attractive investment opportunities. The median return on assets of these firms is forecast to be 19.5%, and the firms have responded with high plowback ratios. Most of these firms pay no dividends at all. The high return on assets and high plowback result in rapid growth. The median growth rate of earnings per share in this group is projected at 17.6%.
>
> In contrast, the electric utilities are *more representative of mature firms*. Their median return on assets is lower, 6.5%; dividend payout is higher, 68%; and median growth is lower, 4.6%.
>
> ***
>
> To value companies with temporarily high growth, analysts use a multistage version of the dividend discount model. Dividends in the early high-growth period are forecast and their combined present value is calculated. Then, once the firm is projected to settle down to *a steady-growth phase, the constant-growth DDM is applied to value the remaining stream of dividends*.[41] (Clarification and emphasis added)

The economics of the public utility business indicate that the industry is in the steady-state, or constant-growth stage of a multi-stage DCF, which would mean that the three- to five-year projected growth rates for each company would be the "steady-state" or terminal growth rate appropriate for the DCF model for utility companies, not the GDP growth rate, which is not a company-specific growth rate, nor is it an upward bound for growth.

[41] Z. Bodie, A. Kane, and A. J. Marcus, *Investments*, 7th Edition, McGraw-Hill Irwin, 2008, at 616-617.

**Q. Why is long-term growth in GDP not an upper limit for growth, as Mr. Walters contends?**

A. First, GDP is not a market measure – rather it is a measure of the value of the total output of goods and services, excluding inflation, in an economy. While I understand that EPS growth is also not a market measure, it is well established in the financial literature that projected growth in EPS is the superior measure of dividend growth in a DCF model.[42] Furthermore, GDP is simply the sum of all private industry and government output in the United States, and its growth rate is simply an average of the value of those industries. To illustrate, Schedule DWD-R-3 presents the compound growth rate of the industries that comprise GDP from 1947 to 2022. Of the 15 industries represented, eight industries, including utilities, grew faster than the overall GDP, and seven industries grew slower than the overall GDP.[43] Given that utilities have grown faster than the overall GDP, I disagree with Mr. Walters' suggestion that "over the long-term, a Company's earnings and dividends cannot grow at a rate greater than the growth of the U.S. GDP."[44]

**Q. Did you conduct another analysis that calculates the amount of time it would take an industry to overtake the entire economy?**

A. Yes. I examined the value added by industry from 1947 to 2022 in Schedule DWD-R-3 and used the compound annual growth rates for the highest growth rate

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42 Harris, Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return, Financial Management, Spring 1986; Christofi, Christofi, Lori and Moliver, Evaluating Common Stocks Using Value Line's Projected Cash Flows and Implied Growth Rate, Journal of Investing, Spring 1999; Harris and Marston, Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts, Financial Management, Summer 1992; and Vander Weide and Carleton, Investor Growth Expectations: Analysts vs. History, The Journal of Portfolio Management, Spring 1988.

43 Source of Information: Bureau of Economic Analysis.

44 Walters Direct Testimony, at 35.

industry (Educational Services, Healthcare, and Social Assistance, 8.53% / year) to see when that industry would comprise the entire economy. In the year 2327, or 380 years from the 1947 starting point, the industry would comprise over 50% of GDP; and in the year 8982, 7,035 years after the 1947 starting point, the industry would comprise 100% of GDP.[45] Not only have individual companies or industries consistently grown at rates beyond GDP growth, but they have done so without overtaking the entire economy. While Mr. Walters' argument is technically correct, it is unrealistic at best.

**Q. Why do you disagree with the use of projected GDP growth in a multi-stage DCF model?**

A. The basis of a multi-stage model, as presented by Mr. Walters, is mean reversion; that is, stock growth rates revert to the average growth rate of the economy. Therefore, it would be an inconsistent application of the multi-stage DCF model to assume anything other than growth in GDP reverting to its long-term mean. Because of the inherent theory behind multi-stage DCF models, Mr. Walters should have used the historical real GDP growth rate for the period of 1929 to 2022, adjusted for projected inflation.

**Q. What are your conclusions as they relate to Mr. Walters' DCF analysis?**

A. First, Mr. Walters' considers results that are contrary to financial theory, and violate the principles of risk and return. Second, Mr. Walters does not include EPS growth rates from *Value Line*. Third, Mr. Walters' multi-stage DCF model is inappropriate

[45] To put the amount of time that will take these two milestones to happen in perspective, approximately 300 years ago, in the year 1719, France and Spain were at war in New France (now Louisiana), and approximately 3,476 years ago, in the year 1457 BC, the first recorded battle in military history, the Battle of Megiddo, was waged between the Egyptians, led by Pharaoh Thutmose III against Kadesh, Canaanite, Mitanni, and Amurru forces. *See also* Zager and Evans, *In the Year 2525*, *on* 2525 (Exordium & Terminus) (RCA 1968).

to rely on given that utilities are in the steady state growth stage. As such, the multi-stage DCF results should be ignored. Finally, Mr. Walters' use of a sustainable growth rate is also inappropriate as it is not shown to be related to future earnings growth.

## D. RISK PREMIUM METHOD (RPM)

**Q. Please briefly describe Mr. Walters' RPM.**

A. Mr. Walters defines the "Risk Premium" as the difference between average annual authorized equity returns for natural gas utilities and a measure of long-term interest rates each year from 1986 through 2022.[46] Mr. Walters' first approach to estimating the RPM looks to the 30-year Treasury yield, and his second considers the average A-rated utility bond yield.[47] In each case, Mr. Walters establishes his risk premium estimate by reference to five-year and ten-year rolling averages.

Mr. Walters looks to 37 years of returns, arguing "[a] relatively long period of time where stock valuations reflect premiums to book value indicates that the authorized ROEs and the corresponding equity risk premiums were supportive of investors' return expectations."[48] Pointing specifically to the current interest rate environment, Mr. Walters considers risk premium estimates of 5.93% based on his Treasury bond analysis, and 4.53% based on his A-rated utility bond analysis.[49]

Combined with a 3.70% projected 30-Year Treasury yield, A-rated utility bond yield estimates of 5.25% and 5.43%, and Baa-rated utility bond yield estimates of 5.53% and 5.72%, Mr. Walters' RPM produced results ranging from

46 Walters Direct Testimony, at 39-40; Exhibits CCW-10 and CCW-11.
47 *Ibid*.
48 *Ibid*., at 41.
49 *Ibid*., at 42-43.

9.63% to 10.25% (*see* Table 5 below).[50]

**Table 5: Mr. Walters' Risk Premium ROE Results**

| Mr. Walters' Risk Premium Estimates | Projected 30-Year Treasury Yield: 3.70% | 13-Week Avg A-Rated Utility Bond Yield: 5.25% | 26-Week Avg A-Rated Utility Bond Yield: 5.43% | 13-Week Avg Baa-Rated Utility Bond Yield: 5.53% | 26-Week Avg Baa-Rated Utility Bond Yield: 5.72% |
|---|---|---|---|---|---|
| Treasury: 5.93% | 9.63% | | | | |
| Utility Bond: 4.53% | | 9.78% | 10.06% | 9.96% | 10.25% |

**Q. Do you have specific concerns with Mr. Walters' RPM?**

A. Yes. I have four concerns with Mr. Walters' analysis, namely: (1) his use of the 1986 – 2022 time period; (2) his method and recommendation ignore an important relationship revealed by his own data, i.e., that there is an inverse relationship between equity risk premiums ("ERP") and interest rates (whether measured by U.S. Treasury bonds or public utility bond yields); (3) his mismatched application of projected Treasury bond yields and current utility bond yields; and (4) his sole reliance on authorized gas returns.

**Q. What are your concerns with Mr. Walters' use of the 1986 – 2022 time period to determine an ERP?**

A. Mr. Walters selected the period 1986 – 2022 "because public utility stocks consistently traded at a premium to book value during that period."[51] He concludes that "[o]ver this period, an analyst can infer that authorized ROEs were sufficient to support market prices that at least exceeded book value."[52] Mr. Walters is mistaken. Market values can diverge from book values for a myriad of reasons

50 *Ibid*.
51 *Ibid.*, at 40.
52 *Ibid.*

including, but not limited to, EPS and dividends per share ("DPS") expectations, merger/acquisition expectations, interest rates, etc. As noted by Phillips:

> Many question the assumption that market price should equal book value, believing that 'the earnings of utilities should be sufficiently high to achieve market-to-book ratios which are consistent with those prevailing for stocks of unregulated companies.[53]

As discussed by Bonbright, it is very clear that the market prices of public utility common stocks are influenced by factors which are beyond the direct influences of the regulatory process:

> In the first place, commissions cannot forecast, except within wide limits, the effect their rate orders will have on the market prices of the stocks of the companies they regulate. In the second place, *whatever the initial market prices may be, they are sure to change not only with the changing prospects for earnings, but with the changing outlook of an inherently volatile stock market.* In short, market prices are beyond the control, though not beyond the influence of rate regulation. Moreover, even if a commission did possess the power of control, any attempt to exercise it ... would result in harmful, uneconomic shifts in public utility rate levels (emphasis added). [54]

In addition, relative to the 1986-2022 time period, as discussed previously, SBBI – 2023 makes it clear that the arbitrary selection of short historical periods is highly suspect and unlikely to be representative of long-term trends in market data.[55]

The academic literature demonstrates and confirms that while regulation is a substitute for marketplace competition, it has an effect on, but no direct control over market prices, and hence market-to-book ("M/B") ratios of regulated utilities. The academic literature also shows that a subset of data could be subject to data

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53 Charles F. Phillips, The Regulation of Public Utilities, Public Utility Reports, Inc., 1993, at 395.

54 James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utility Rates (Public Utilities Reports, Inc., 1988), at 334.

55 SBBI-2023, at 193-194.

manipulation. Because of this, no valid conclusion of ERPs can be drawn for the 1986-2022 period.

**Q. Is there a direct relationship between the M/B ratios of unregulated companies and their earned rates of return on book common equity?**

A. No. Since regulation acts as a surrogate for competition, one must look to the competitive environment for evidence of a direct relationship between M/B ratios and earned returns on common equity. To determine if Mr. Walters' implicit assumption of such a direct relationship has any merit, I observed the M/B ratios and the earned returns on common equity of the S&P Industrial Index, and the S&P 500 Composite Index, over a long period of time. On Schedule DWD-R-4, I have shown the M/B ratios, rates of return on book common equity (earnings / book ratios), annual inflation rates, and the earnings / book ratios net of inflation (real rate of earnings) annually for the years 1947 through 2021. In each year, the M/B ratios of the S&P Industrial Index equaled or exceeded 1.00 times (or 100%). In 1949, the only year in which the M/B ratio was 1.00, the real rate of earnings on book equity, adjusted for deflation, was 18.1% (16.3% + 1.8%). In contrast, in 1961, when the S&P Industrial Index experienced an M/B ratio of 2.01 times, the real rate of earnings on book equity for the S&P Industrial Index was only 9.1% (9.8%-0.7%). In 1997, the M/B ratio for the Index was 5.88 times, while the average real rate of earnings on book equity was 22.9% (24.6%-1.7%).

This analysis clearly demonstrates that competitive, unregulated companies have never sold below book value, on average, and have sold at book value in only one year since 1947. Because this lack of a relationship between earnings / book ratios and M/B ratios covers a 75-year period, 1947 through 2021,

it cannot be validly argued that going forward a relationship would exist between earnings / book ratios and M/B ratios. The analysis shown on Schedule DWD-R-4, coupled with the supportive academic literature, demonstrate the following: (1) that while regulation is a substitute for marketplace competition, it can influence, but not directly control market prices, and hence, M/B ratios; and (2) that the rates of return investors expect to achieve, and which influence their willingness to pay market prices well in excess of book values have no meaningful, direct relationship to rates of earnings on book equity. Because of this, no valid conclusion of ERPs can be drawn for the 1986-2022 period because of M/B ratios in excess of one.

**Q. Does Mr. Walters' RPM analysis ignore the inverse relationship between ERPs and interest rates?**

A. Yes. Reviewing the data in Exhibits CCW-10 and CCW-11, I discovered that the ERP as presented by Mr. Walters tends to move inversely with changes in interest rates. In other words, as interest rates fall, the ERP increases. Several academic studies support my findings. In Brigham, Shome, and Vinson's article, *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, the authors explain that "with 'proper' regulation, utility stocks would provide a better hedge against unanticipated inflation than would bonds."[56] In that case, if concerns regarding future inflation increase, the perceived risk of bonds would increase more than the perceived risk of equity. That is, the return required on equity would increase less than the return required on bonds, thereby decreasing the ERP.

The relationship between interest rates, inflation, and expected returns also

[56] Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, Financial Management (Spring 1985), at 43.

was explained in a 1985 Financial Analysts Journal article:

> For securities such as bonds, whose cash flows (coupon payments) are fixed, an unanticipated increase in inflation results in a decline in price. The decline in price, combined with a fixed coupon, raises the expected return and compensates for the higher rate of inflation.
>
> ***
>
> For securities such as common stocks, whose cash flows (dividends) are flexible, the price of the security does not necessarily change in response to unanticipated inflation. Stock dividends may rise to offset an increase in the rate of inflation, precluding any need for price adjustment.[57]

Other published research has shown the ERP is not constant, but varies inversely with interest rates. Harris and Marston found the ERP to change inversely to changes in interest rates, concluding that "…the notion of a constant risk premium over time is not an adequate explanation of pricing in equity versus debt markets."[58] Similarly, a study by Maddox, Pippert, and Sullivan found their results "indicate a statistically significant inverse relationship between interest rates and utility equity risk premiums."[59]

**Q. How does Mr. Walters' data show the inverse relationship between ERPs and interest rates?**

A. As shown on Charts 3 and 4 below, based on empirical analyses of the data presented in Exhibits CCW-10 and CCW-11, ERPs have moved inversely with changes in U.S. Treasury bond yields for 1986-2022.

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57 James L. Farrell Jr., *The Dividend Discount Model: A Primer*, Financial Analysts Journal, November-December 1985, at 23.

58 Robert S. Harris and Felicia C. Marston, *The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts*, Journal of Applied Finance, Vol. 11, No. 1, 2001, at 11-12, 14. The authors also found credit spreads are positively related to the ERP.

59 Farris M. Maddox, Donna T. Pippert, and Rodney N. Sullivan, *An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry*, Financial Management, Vol. 24, No. 3, Autumn 1995 at 95.

**Chart 3: Empirical Analysis of Exhibit CCW-10**[60]

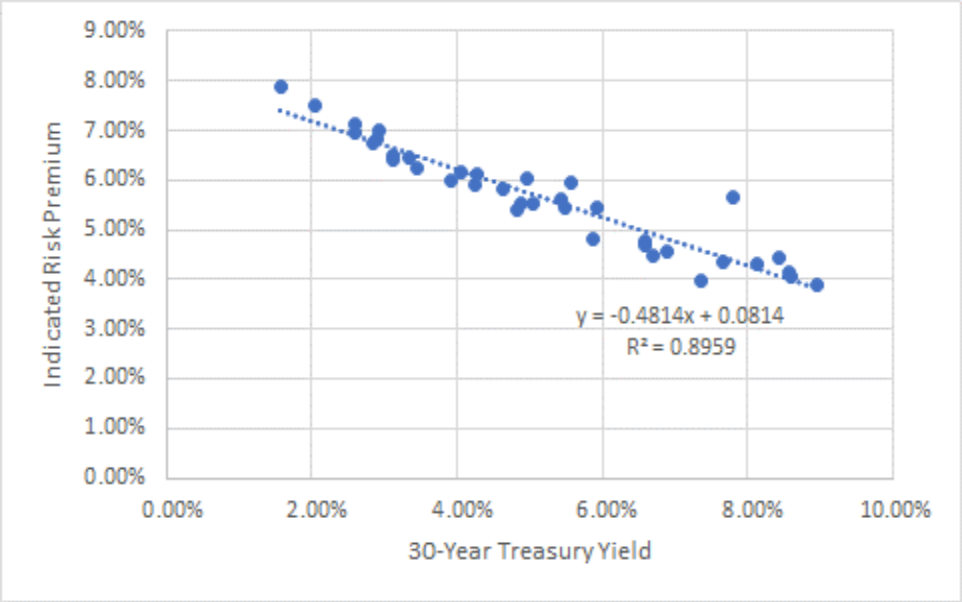
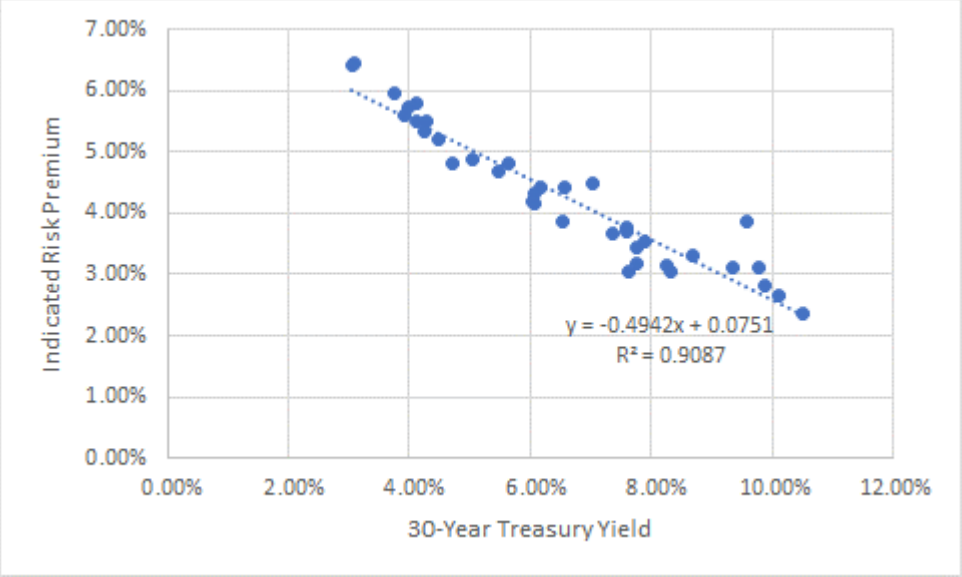



**Chart 4: Empirical Analysis of Exhibit CCW-11**[61]




When looking at the inverse relationship between ERPs and interest rates, as shown on Charts 3 and 4 which use Mr. Walters' data, the R-squared are approximately 90%. This means that the movement in interest rates explains

60 Schedule DWD-R-5, page 1.
61 Schedule DWD-R-5, page 2.

approximately 90% of the movement in ERP, which I would consider to be a strong relationship.[62]

**Q. Mr. Walters used current A- and Baa-rated public utility bond yields in his RPM analysis. Please comment.**

A. Mr. Walters' use of a Baa-rated public utility bond yield is incorrect for two reasons. First, Mr. Walters applied a Baa-rated public utility bond yield to an ERP derived from A-rated public utility bonds, improperly matching the ERP measured relative to A-rated public utility bond yields with a Baa-rated public utility bond yield. Second, Mr. Walters' use of current A- and Baa-rated public utility bond yields is inconsistent with his entire return on common equity analysis. For example, Mr. Walters used an expected risk-free rate in both his CAPM analysis and his U.S. Treasury bond-based ERP analysis, analyst projections of EPS and sustainable growth in his constant growth DCF model applications, and projected inflation in his derivation of his projected market ERP. For internal consistency in his analyses, and to be theoretically correct as well as consistent with the prospective nature of both ratemaking and the cost of capital, a projected A-rated public utility bond yield should be used in Mr. Walters' RPM analyses.

**Q. How can a projected A-rated public utility bond yield be estimated?**

A. One source is *Blue Chip Financial Forecasts'* (*Blue Chip)*[63] forecasts of Aaa-rated corporate bond yields adjusted to reflect a recent spread between A-rated public utility bond yields and Aaa-rated corporate bond yields. Using data that would

[62] I also note the t-statistics from these analyses indicate the relationship is highly statistically significant.

[63] *Blue Chip* is a source relied upon by Mr. Walters for projected inflation in developing his projected MRP for his CAPM analysis.

have been available to Mr. Walters when he filed his direct testimony, *Blue Chip* forecasts Aaa-rated corporate bonds to yield an average 4.76%, based upon an average of the six quarters ending with the third quarter 2024 and 2024-2028 and 2029-2033.[64] However, the 4.76% projected Aaa-rated corporate bond yield needs to be adjusted to estimate an equivalent A-rated public utility bond yield. Using a three-month average bond yield spread (approximately 13 weeks, consistent with Mr. Walters' analysis), an upward adjustment of 77 basis points is necessary, resulting in a prospective A-rated public utility bond yield of 5.54%.

**Q. Do you agree with Mr. Walters' use of gas returns in his RPM analysis?**

A. No, I do not. Mr. Walters' sole reliance on gas returns is inappropriate for determining the Risk Premium for a water utility. As discussed above, water utilities have unique risks not borne by gas or electric companies and therefore should not be treated as such. That being said, if the Commission decides to consider Mr. Walters' RPM, it should also account for the adjustments described above, which are supported empirically and in financial literature.

**Q. Please summarize the range of RPM-indicated common equity cost rates after correcting Mr. Walters' RPM analysis.**

A. As shown on Schedule DWD-R-5, applying a projected risk-free rate of 3.84%[65] and prospective A2-rated public utility bond yield of 5.54% to the regression equations in Charts 3 and 4 produces results of 10.13% and 10.31%, respectively. As discussed previously, while I do not agree with Mr. Walters' basic RPM, the corrected RPM results based upon regression analyses of his data are more

64 *Blue Chip Financial Forecasts*, March 1, 2023, at 2, and December 2, 2022, at 14.
65 *See, Blue Chip Financial Forecasts*, March 1, 2023, at 2, and December 2, 2022, at 14.

appropriate indicators of common equity cost rates than his conclusion of 9.80% relative to U.S. Treasury, A-rated, and Baa-rated public utility bonds. [66]

## E. THE CAPITAL ASSET PRICING MODEL

**Q. Please briefly summarize Mr. Walters' CAPM analysis and results.**

A. Mr. Walters' CAPM analysis combines three estimates of the market risk premium (MRP) and three estimates of beta, along with his projected risk-free rate of 3.70% from *Blue Chip*, to calculate nine CAPM estimates, summarized in Table 6 below.[67]

**Table 6: Mr. Walters CAPM Results[68]**

| Description | Current Beta | Historical Beta | Current MI Beta |
|---|---|---|---|
| D&P Normalized Method | 8.94% | 8.38% | 8.16% |
| Risk Premium Method | 10.47% | 9.71% | 9.43% |
| FERC DCF Method | 9.96% | 9.26% | 9.00% |

Mr. Walters' first MRP estimate is based on the historical average real market return over the 1926-2021 period as reported by Kroll, combined with an expected inflation rate of 2.30% to calculate an expected market return of 11.71%. Subtracting his 3.70% projected risk-free rate results in an MRP of 8.01%.[69]

In the second calculation, he applied a modified version of the FERC DCF method to the S&P 500 Index to calculate the total expected market return. Mr. Walters calculated the weighted average dividend yield and growth rate for each company in the S&P 500, excluding non-dividend paying companies and companies with growth rates that are negative or above 20%. Mr. Walters then applied a one-half growth rate adjustment to the resulting dividend yield to arrive at the expected dividend yield for the S&P 500 of 2.09%. Adding the expected

66 Walters Direct Testimony, at 43.
67 *Ibid.*, at 51-52.
68 *Ibid*.
69 *Ibid*., at 47.

dividend yield to the weighted average growth rate of 8.70% resulted in a market return of approximately 10.79%.[70] Subtracting his 3.70% projected risk-free rate from his DCF-based market return of 10.79% resulted in an MRP of approximately 7.10%.[71] Mr. Walters then performed the same analysis including all companies in the S&P 500, which resulted in an MRP of 7.70%.[72] The average of those two results is 7.40%.[73]

Mr. Walters' final MRP is the 6.00% "normalized" MRP recommended by Kroll.[74]

**Q. Is Mr. Walters' CAPM methodology and result sound?**

A. No. Mr. Walters' CAPM analysis is flawed in at least five respects: (1) while Mr. Walters did use a short-term projected risk-free rate in his CAPM analysis, he did not consider the long-term projection of the risk-free rate published by *Blue Chip*; (2) he relied, in part, on Vasicek betas; (3) he relied, in part, on historical betas; (4) his choice and calculation of his MRP was flawed; and (5) he did not perform an ECAPM analysis.

**Q. Does Mr. Walters rely on Blue Chip throughout his analysis?**

A. Yes, he does. Specifically, Mr. Walters used *Blue Chip* for his short-term projected interest yield on 30-year Treasury bonds for his CAPM analysis, his terminal growth rate in his multi-stage DCF model analysis, and also discussed five- and ten-year projected interest rates in the capital markets section of his direct testimony.[75] Because of Mr. Walters' reliance on *Blue Chip*, I find it curious that

70 *Ibid*., at 48.
71 *Ibid*.
72 *Ibid*.
73 *Ibid*.
74 *Ibid*., at 51.
75 *Ibid*., at 15.

he does not use the long-term projections published by *Blue Chip* for his analysis.

Not incorporating the longest projection available is inconsistent with Mr. Walters' application of the DCF model in which there is an assumption that the projected "g" is constant into perpetuity, creating a mismatch between the application of his models. It is also inconsistent with the EMH as discussed above. The semi-strong form of the EMH assumes that all information (including long-term forecasts of interest rates) are available to the investor, which means the long-term forecasted interest rate would be considered by investors when making investment decisions and, therefore, should be included in Mr. Walters' CAPM analysis.

**Q. Do you agree with Mr. Walters' use of Vasicek-adjusted betas in his CAPM analysis?**

A. No, I do not. First, Vasicek-adjusted betas are not widely available in the market or known to investors compared to Blume-adjusted betas. Second, the Vasicek adjustment looks to standard errors of betas; the higher the standard error, the less reliable the beta estimate is, and the larger the adjustment of the beta to the market, peer group, or industry average beta. While the Vasicek-adjusted beta adjusts beta toward the industry average, it does not account for the tendency of low-beta stocks to understate expected risk. Third and finally, Duff & Phelps cites to a Delaware Court of Chancery decision that may support that more extreme betas tend to revert to the industry mean over time,[76] but Mr. Walters has provided no evidence that utility betas are extreme, nor has he provided any evidence that utility betas do not revert to 1.0. In fact, the recent movement of utility betas toward 1.0 shows that utility betas should be Blume-adjusted and not Vasicek-adjusted.

[76] Duff & Phelps Investment Analyzer, 2020, Chapter 5, at 8.

**Q. Do you agree with Mr. Walters' use of historical betas in his CAPM analysis?**

A. No, I do not. The determination of the ROE is a measure of the investor expected return at any given point of time using current and expected measures. The use of historical betas is neither current nor expected. The analytical models that form the basis of the recommended ROE represent a snapshot of Confluence's investor-required return at the time of the analysis and should not be normalized based on speculation that current market conditions may change in the future.

**Q. Do you agree with Mr. Walters' forward-looking MRP estimate?**

A. No, I do not. Although Mr. Walters applies a projection of inflation to develop his "forward-looking" MRP estimate, his approach is based principally on the historical real market rate of return. The MRP represents the additional return required by equity investors to assume the risks of owning the "market portfolio" of equity relative to long-term Treasury securities. As with other elements of cost of common equity analyses, the MRP is meant to be a forward-looking parameter. Relying on an MRP calculated using historical returns may produce results that are inconsistent with investor sentiment and current conditions in capital markets. The fundamental analytical issue in applying the CAPM is to ensure that all three components of the model (i.e., the risk-free rate, beta, and the MRP) are consistent with market conditions and investor expectations. As Morningstar observes:

> It is important to note that the expected equity risk premium, as it is used in discount rates and cost of capital analysis, is a forward-looking concept. That is, the equity risk premium that is used in the discount rate should be reflective of what investors think the risk premium will be going forward.[77]

Longstanding financial research has shown the MRP to vary over time along

[77] Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 53.

with market conditions. French, Schwert, and Stambaugh, for example, found the MRP to be positively related to predictable market volatility.[78] Using forward-looking measures of the expected market return, Harris and Marston found " . . . strong evidence . . . that market risk premia change over time and, as a result, use of a constant historical average risk premium is not likely to mirror changes in investor return requirements."[79] Among their findings is that the MRP is inversely related to Government bond yields. That is, as interest rates fall, the MRP increases. Unlike Mr. Walters' position, financial researchers have found the MRP to be time-varying, and a function of economic parameters including interest rates, as discussed previously.

**Q. Do you agree with Mr. Walters' market return estimate based on the FERC methodology including only dividend paying companies?**

A. No. As discussed in my direct testimony, the prospective market return is meant to measure the return on the overall market, not an arbitrary subset of companies. By excluding non-dividend paying companies some of the largest companies in the market (based on market capitalization) would not be considered part of the investible universe. Additionally, removing non-dividend paying companies from the calculation of the MRP is internally inconsistent with the CAPM's application. A fundamental assumption of the CAPM is that the required return is proportional to the risk of the investment. In the CAPM structure, beta is the measure of the dispersion of the subject company's returns relative to the overall market, and the

[78] Kenneth R. French, G. William Schwert, Robert F. Stambaugh, *Expected Stock Returns and Volatility*, Journal of Financial Economics 19 (1987), at 27.

[79] *See,* Robert S. Harris, Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts,* Financial Management, Summer 1992, at 69.

correlation of its returns to the market. Because beta is calculated relative to the overall market, which includes non-dividend paying companies, it is important that the expected market return also reflects the overall market.

Combining betas calculated relative to the entire market with a MRP calculated using only a subset of the market (i.e., dividend paying companies), therefore, may introduce a bias to the analysis. Because betas are a positive function of the correlation of returns between the subject company and the index, removing non-dividend paying companies may decrease the correlation of the proxy companies with the market index, thereby decreasing the beta. On the other hand, dividend paying companies may have lower volatility than non-dividend paying companies. Because the beta also reflects relative volatility (*i.e.*, subject company relative to the index), if the volatility of the index falls, the relative volatility may increase, increasing the beta. Simply, removing non-dividend paying companies from the market index may provide an incomplete measure of the expected market return, and a biased estimate of the beta.

As such, Mr. Walters' market return calculation using only dividend paying companies in the S&P 500 should be rejected.

**Q. What is your position on the 6.00% MRP quoted by Kroll?**

A. A forecast is only as good as its inputs, and if the assumptions within those forecasts are by its nature unpredictable (e.g. productivity growth forecasts), they are of little value. In addition, the determination of the MRP as calculated by Kroll is not transparent, especially in view of the historical data presented in SBBI – 2023, or the composition of its supply side method, which are already well known by investors. Because of the transparency of the historical data and how to gather

and use the components of the supply side model, both the historical MRP (using the long-term arithmetic mean return on large company stocks less the long-term arithmetic income returns on long-term Government bonds) and the supply side model are superior measures of the MRP, when comparing to Kroll's simplistic and opaque MRP forecast.

**Q. Did Mr. Walters conduct an ECAPM analysis?**

A. No, he did not. As noted in my direct testimony, the ECAPM reflects the reality that the CAPM understates the returns of low-beta stocks and overstates the returns for high-beta stocks.[80] As such, its use is appropriate.

**Q. What would the results of Mr. Walters' CAPM analysis be had he relied on proper inputs?**

A. As shown in Schedule DWD-R-6, I have corrected Mr. Walters' CAPM analysis by: (1) including both the short-term and long-term projections of the 30-year Treasury yield in the estimation of the risk-free rate; (2) excluding his market returns based on the "D&P Normalized" method and "Risk Premium Method"; (3) excluding his historical and S&P Capital IQ betas; (4) relying solely on his estimate of the "FERC DCF" market return which includes all companies in the S&P 500; and (5) estimating the ECAPM. Those corrections result in a CAPM estimate of 10.25% and an ECAPM estimate of 10.53% for his Total Proxy Group, and 9.87% and 10.25% for the water utilities.

[80] D'Ascendis Direct Testimony, at 39-41.

## F. COMPANY-SPECIFIC ADJUSTMENTS

**Q. Does Mr. Walters consider all appropriate Company-specific risk factors in developing his ROE recommendations?**

A. No. While Mr. Walters accounts for the Company's lower financial risk based on its proposed capital structure, he fails to account for the Company's operational risks relative to his proxy group. Instead, Mr. Walters mentions that even though Confluence is not a rated utility he has "no reason to believe that Confluence would be rated much differently than the proxy group as a low-risk regulated water utility."[81]

**Q. Do you agree with Mr. Walters' assessment that Confluence would be considered a "low-risk regulated water utility"?**

A. No, I do not. As discussed above and detailed by Company witnesses Cox and Freeman, Confluence faces substantial operating risks as compared to traditional water utilities. This is reflected in increased debt cost rates and increased authorized ROEs.

**Q. You mentioned that Confluence Rivers has an increased cost of debt as compared to traditional operating water utilities. Have you reviewed debt issuances of other water utilities concurrent with the Company's debt issuance?**

A. Yes. As shown on Table 7, the Company's debt cost rate is significantly higher than those of traditional water utilities, indicating higher risk. This increased investment risk must also be reflected in its ROE.

[81] Walters Direct Testimony, at 22.

**Table 7: Utility Proxy Group Debt Issuances[82]**

| Company | Issuance Date | Coupon Rate | Amount |
|---|---|---|---|
| American Water Works Company, Inc. | May 2022 | 4.45% | $800M |
| Essential Utilities, Inc. | May 2022 | 5.30% | $500M |
| SJW Group (Maine Water) | May 2022 | 4.54% | $15M |
| SJW Group (SJWTX) | October 2022 | 5.54% | $15M |
| SJW Group (Connecticut Water) | December 2022 | 4.71% | $25M |

## V. RESPONSE TO OPC WITNESS MURRAY

**Q. Please provide a summary of Mr. Murray's analyses and conclusions regarding the Company's ROE.**

A. Mr. Murray recommends an ROE of 9.65% for Confluence Rivers. He develops his recommendation by first determining that a fair and reasonable ROE for an average water utility, such as Missouri American Water Company, is 9.00%, within a range of 8.60% to 9.25%. He then adjusts his recommended range and ROE upwards by 65 basis points to account for "uncertainty related to future financial performance of the acquired systems." Mr. Murray notes that his recommended ROE is contingent on the adoption of his recommended capital structure but provides no alternative ROE recommendation.[83]

**Q. Do you have any general comments regarding Mr. Murray's cost of common equity analyses and conclusions?**

A. Yes, I do. In determining his recommended range applicable to an average water utility, he begins with the average allowed ROE for water utilities for 2022, from which he adds and subtracts 100 basis points to form a range of 8.60% to 10.60%. Without explanation however, he dismisses the upper half of this range and arrives

[82] S&P Capital IQ Pro; SJW Group SEC Form 10-Ks for Fiscal Year ended December 31, 2022 at 43.
[83] Murray Direct Testimony, at 22-23.

at a range applicable to an average water utility of 8.60% to 9.25%, instead noting that 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."[84]

In presenting his analyses and conclusions, Mr. Murray states that:

> 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.[85]

Despite his claims, and in light of his calculated cost of common equity estimates of 6.25% to 6.75%,[86] he ultimately relies on allowed ROEs in determining his final recommendations as noted above.

**Q. Do you agree with Mr. Murray's characterization of the ROE and COE?**

A. No. For regulated utilities, the ROE equals the investor-required ROE which equals the allowed ROE, as reflected in the *Hope* and *Bluefield* Supreme Court decisions cited in both my and Mr. Murray direct testimony.[87] This relationship holds because utility regulation by regulatory commissions acts as a substitute for competition.

**Q. Is the concept of utility regulation as a substitute for market competition widely accepted as a fact and reflected as such in academic literature?**

A. Yes, it is. The *Cost of Capital Manual*, which is the training manual for the Society

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84 *Ibid.*, at 22.
85 *Ibid.*, at 20.
86 *Ibid.*, at 21.
87 D'Ascendis Direct Testimony, at 3; Murray Direct Testimony, at 20.

of Utility and Regulatory Financial Analysts, states:

> In a sense, the "visible hand of public regulation was (created) to replace the invisible hand of Adam Smith in order to protect consumers against exorbitant charges, restriction of output, deterioration of service, and unfair discrimination."[footnote omitted]
>
> ***
>
> As indicated above, regulation of public utilities reflects a belief that the competitive mechanism alone cannot be relied upon to protect the public interest. Essentially, it is theorized that a truly competitive market involving utilities cannot survive and, thereby, will fail to promote the general economic welfare. But this does not mean that regulation should alter the norm of competitive behavior for utilities. On the contrary, the primary objective of regulation is to produce market results (*i.e.,* price and quantity supplied) in the utility sectors of the economy closely approximating those conditions which would be obtained if utility rates and services were determined competitively.[88]

Additionally, in Principles of Public Utility Rates, Bonbright states:

> Lest the reader of this chapter gain the impression that it is intended to deny the relevance of any tests of reasonable rates derived from the theory or the behavior of competitive prices, let me state my conviction that no such conclusion would be warranted. On the contrary, a study of price behavior both under assumed conditions of pure competition and under actual conditions of mixed competition is essential to the development of sound principles of utility rate control. Not only that: any good program of public utility rate making must go a certain distance in accepting competitive-price principles as guides to monopoly pricing. For rate regulation must necessarily try to accomplish the major objectives that unregulated competition is designed to accomplish; and the similarity of purpose calls for a considerable degree of similarity of price behavior.
>
> Regulation, then, as I conceive it, is indeed a substitute for competition; and it is even a partly imitative substitute. But so is a Diesel locomotive a partly imitative substitute for a steam locomotive, and so is a telephone message a partly imitative substitute for a telegraph message. What I am trying to emphasize by these crude analogies is that the very nature of a monopolistic public utility is such as to preclude an attempt to make the emulation of competition very close. The fact, for example, that theories of pure competition leave

[88] David C. Parcell, *Cost of Capital Manual*, Society of Utility and Regulatory Financial Analysts, 2020 Edition, at 3-4.

> no room for rate discrimination, while suggesting a reason for viewing the practice with skepticism, does not prove that discrimination should be outlawed. And a similar statement would apply alike to the use of an original-cost or a fair value rate base, neither of which is defensible under the theory or practice of competitive pricing.[89]

Finally, Phillips states in The Regulation of Public Utilities:

> Public utilities are no longer, if they ever were, isolated from the rest of the economy. It is possible that the expanding utility sector has been taking too large a share of the nation's resources, especially of investment.[footnote omitted] At a minimum, regulation must be viewed in the context of the entire economy – and evaluated in a similar context. Public utilities have always operated within the framework of a competitive system. They must obtain capital, labor and materials in competition with unregulated industries. Adequate profits are not guaranteed to them. Regulation then, should provide incentives to adopt new methods, improve quality, increase efficiency, cut costs, develop new markets and expand output in line with customer demand. In short, regulation is a substitute for competition and should attempt to put the utility sector under the same restraints competition places on the industrial sector.[90]

In view of the legal standards and treatises on regulation likening regulation of utilities and the competitive market, it is plain to see that allowed returns and investor-required returns are equal.

**Q. In light of the above discussion regarding the relationship between the ROE and COE, are Mr. Murray's calculated cost of common equity estimates an appropriate measure of the investor required return??**

A. No. Mr. Murray's indicated range of 6.25% to 6.75% is far removed from authorized ROEs in the country since at least 1980. Mr. Murray acknowledges this as he gives his model result no weight. In his analysis, Mr. Murray's model results

89 James C. Bonbright, Principles of Public Utility Rates, Columbia University Press, 1961, at 106-107.

90 Charles F. Phillips, The Regulation of Public Utilities, Public Utility Reports, Inc., 1993, at 173.

also fail his own "rule of thumb" criterion for a reasonable ROE, which indicates an ROE of 8.25% to 8.55%.

**Q. Is a 9.00% ROE as noted by Mr. Murray reflective of recently authorized ROEs for water utilities?**

A. No, it is not. As noted by Staff witness Walters in his Figure CCW-1, recently authorized ROEs for water utilities have been approximately 9.61%. Further, the North Carolina Utilities Commission has recently authorized ROEs of 9.80% in two separate proceedings.[91] Adding Mr. Murray's 65 basis point adjustment would produce ROEs ranging from 10.26% to 10.45%.

**Q. Do you agree with Mr. Murray's Company-specific adjustment to his industry-specific range of ROEs based on its increased business risk?**

A. Yes, but only to a degree. I agree with Mr. Murray's sentiment, but not his ultimate adjustment. It is my opinion that the Company's business risk exceeds the 65-basis-point adjustment based on the testimonies of Messrs. Cox and Freeman, as mentioned above.

**Q. Do you have any concerns regarding Mr. Murray's analyses and conclusions?**

A. I disagree with several aspects of Mr. Murray's testimony, including: (1) his

[91] North Carolina Utilities Commission, Docket No. W-218, Sub 573, In the Matter of Application by Aqua North Carolina, Inc., 202 MacKenan Courty, Cary, North Carolina 27511, for Authority to Adjust and Increase Rates for Water and Sewer Utility Service in All Its Service Areas in North Carolina and for Approval of a Water and Sewer Investment Plan, Order Approving Partial Settlement Agreement and Stipulation, Deciding Contested Issues, Approving Water and Sewer Investment Plan, Granting Partial Rate Increases, and Requiring Customer Notice, June 5, 2023, at 19, 63; North Carolina Utilities Commission, Docket No. W-354, Sub 400, In the Matter of Application by Carolina Water Service, Inc. for Authority to Adjust and Increase Rates for Water and Sewer Utility Service in All Its Service Areas in North Carolina and for Approval of a Three-Year Water and Sewer Investment Plan, Order Approving Partial Settlement Agreement and Stipulation, Deciding Contested Issues, Granting Partial Rate Increase, Approving Water and Sewer Investment Plan, and Requiring Customer Notice, June 5, 2023, at 7, 45.

proposed ratemaking capital structure and debt cost rate; (2) his contention that water utilities are less risky than electric and gas utilities; (3) his application of the DCF model; (4) his application of the CAPM; and (5) his "rule-of-thumb" analysis.

## A. Capital Structure and Cost of Debt

**Q. Please summarize Mr. Murray's proposed ratemaking capital structure and debt cost rate.**

A. Mr. Murray recommends a ratemaking capital structure consisting of 45.00% common equity at his ROE estimate of 9.65%, and 55.00% long-term debt at a cost rate of 6.23%.[92] In recommending his proposed capital structure, Mr. Murray states that his recommendation 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."[93] Regarding his debt cost rate, Mr. Murray **[redacted]** to account for patronage credit, **[redacted]**.

**Q. Do you agree with Mr. Murray's position as it relates to the Company's ratemaking capital structure and debt cost rate?**

A. No, I do not. First, as discussed in the rebuttal testimony of Company witness Thies, it is incorrect to assume a Company will raise more capital than it requires simply because it can. For one, covenants are put in place to protect lenders from the risk of the borrower defaulting, not to encourage the borrower to borrow the maximum amount it can. Second, if the Company did have a 65.00% debt ratio

92 Murray Direct Testimony, at 4, 19.
93 *Ibid*., at 4.

and experienced a net operating loss, the Company would violate the debt covenant as net operating losses would lower the Company's equity balance. Because of this, maintaining a debt ratio that barely meets the debt covenants would be imprudent management of the Company's capital structure, especially given its history of net operating losses. Mr. Murray recognizes this risk in his adjustment to the ROE due to "uncertainty related to future financial performance of the acquired systems."[94]

**Q. Is Mr. Murray's assessment of the Company's ratemaking capital structure consistent with the market's view of the Company's capital structure?**

A. No, it is not. Mr. Murray notes that CoBank, a market participant, views the Company's capital structure exclusive of affiliate liabilities, an assessment to which he agrees. However, Mr. Murray disregards that assessment, and does not provide any alternative market data to substantiate his position otherwise.

**Q. Mr. Murray states that the Company's decision to borrow $7 million is essentially irrelevant. Is this correct?**

A. No, it is not. The $7 million, 6.60% debt issuance replaced a portion of the Company's outstanding debt, which has a 14.00% cost rate. The replacement of 14.00% debt with 6.60% debt considerably lowers costs for the Company's customers. The annual savings for the Company's customers is $518,000.[95]

**Q. What is your position on Mr. Murray's inclusion of patronage credit in calculating a debt cost rate for the Company?**

A. Mr. Murray's inclusion of patronage credit is not correct. As Mr. Murray notes, the

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94 *Ibid.*, at 22.

95 ($7M x 14.00% = $980K, $7M x 6.60% = $462K, $980K - $462K = $518K)

** [redacted] **. However, if the Commission were to authorize Mr. Murray's recommended debt cost rate, and the Company subsequently did not receive a patronage credit, the Company would not be recovering its full cost of debt in its rates, which would impact the perceived risk of the Company.

## B. Application of the Discounted Cash Flow Model

**Q. Please summarize Mr. Murray's DCF analysis.**

A. Mr. Murray applies several multi-stage DCF model analyses to his proxy group of water utilities.[96] In applying his multi-stage DCF model, Mr. Murray relies on equity analysts' DPS estimates in the initial stage of the model for the period of 2023 through 2027. In the transition stage, he assumes a ten-year linear transition from analysts' growth projections to long-term growth rates of 3.75%, 4.00%, and 4.25%, respectively. His transition stage also incorporates a linear transition to the payout ratios he derived based on a terminal ROE of 9.00% and his long-term growth rates of 3.75%, 4.00%, and 4.25%, respectively.[97] The indicated results of his multi-stage DCF models range from 6.02% to 7.50%.[98]

**Q. Do you find Mr. Murray's indicated DCF results to be reasonable?**

A. No, I do not. As discussed in response to Mr. Walters, long-term growth in GDP is not an upper limit for growth, nor is it a reasonable approach to estimating the ROE.

96 Mr. Murray excludes Middlesex as he was unable to find discrete analyst DPS estimates for them.
97 Schedules DM-D-10 – DM-D-12.
98 Murray Direct Testimony, at 37-38.

**Q. Does Mr. Murray rely on the results of his multi-stage DCF model in forming his recommendation?**

A. No, he does not. Mr. Murray relies on recently allowed ROEs to form the basis of his recommendation. Because Mr. Murray himself does not rely on his own model results, I recommend the Commission do the same.

## C. Application of the Capital Asset Pricing Model

**Q. Please summarize Mr. Murray's application of the CAPM.**

A. Mr. Murray performs his CAPM analysis using the following inputs:

- Self-calculated Beta coefficients;
- Three-month average 20- and 30- year Treasury bond yields;
- Kroll's normalized risk-free rate; and
- An MRP of 6.00%, which is based on his consideration of the following three MRPs:
  - Kroll's historical geometric mean total return on large stocks less historical geometric mean total returns on long-term government bonds;
  - Kroll's historical arithmetic mean total return on large stocks less historical arithmetic mean total returns on long-term government bonds; and
  - Kroll's recommended ERP.

Using those inputs, Mr. Murray concludes the indicated CAPM results range from 8.00% to 8.25%.[99]

[99] *Ibid.*, at 41-42.

**Q. What issues do you have with Mr. Murray's CAPM analyses and results?**

A. Mr. Murray's CAPM analysis is flawed in at least four respects. First, Mr. Murray did not use Beta coefficients published by a widely available source. Second, he has incorrectly relied on an historical, i.e., recent,[100] 20- and 30-year Treasury bond yields as his risk-free rate, despite the fact that both ratemaking and the cost of capital are prospective and long-term in nature. Third, he incorrectly calculated the MRP by relying on: (1) a geometric mean historical market ERP; (2) the historical total return on U.S. Treasury bonds; and (3) the Duff & Phelps recommended ERP. Finally, Mr. Murray did not incorporate an ECAPM analysis even though empirical evidence indicates that low-beta securities, such as utilities, earn returns higher than the CAPM predicts, and high-beta securities earn less. Because I have addressed the applicability of historical interest rates, Kroll's recommended ERP, and the use of the ECAPM in response to Mr. Walters, I will not repeat those discussions here. Because Mr. Murray does not rely on this analysis for his indicated range of ROE, and to decrease the scope of this rebuttal testimony, I will not address Mr. Murray's application of the CAPM at this time. If in later stages of this proceeding Mr. Murray expresses that his CAPM results inform his recommendation, I will address his application of the CAPM at that time.

## D. Mr. Murray's "Rule of Thumb" Analysis

**Q. Please describe Mr. Murray's "rule of thumb" analysis.**

A. Mr. Murray states that adding a 3.00% to 4.00% risk premium to a company's own bond yield provides a "fairly simple, but objective cost of equity." Because the investment community views utility stocks as bond proxies, as claimed by Mr.

[100] Schedules DM-D-13 and DM-D-15.

Murray, a premium no higher than 3.00% should be added to recent A- and BBB-rated utility bonds. Applying his "rule of thumb" analysis, Mr. Murray derives ROE estimates of 8.25% to 8.55%.[101]

**Q. Do you agree with Mr. Murray's "rule of thumb" analysis?**

A. No, I do not. First, Mr. Murray's application relies on his premise that utility stocks are proxies for bond investments. Second, it ignores the inverse relationship between interest rates and equity risk premiums.

**Q. Is it correct to view utility stocks as proxies for bond investments?**

A. No, it is not. First, if utility stocks were viewed as a proxy for bond investments, then the entire premise of Mr. Murray's "rule of thumb" analysis is invalid. There would be no need to add a risk premium to current utility bond yields if utility stocks and utility bonds were seen as equals. Second, Mr. Murray states that "[m]y 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)."[102] I disagree with the characterization of water utilities as defensive, which is corroborated by the evidence in Schedule DWD-R-1. More importantly, Mr. Murray himself does not view water utilities as bond proxies, disregarding the premise of his "rule of thumb" analysis.

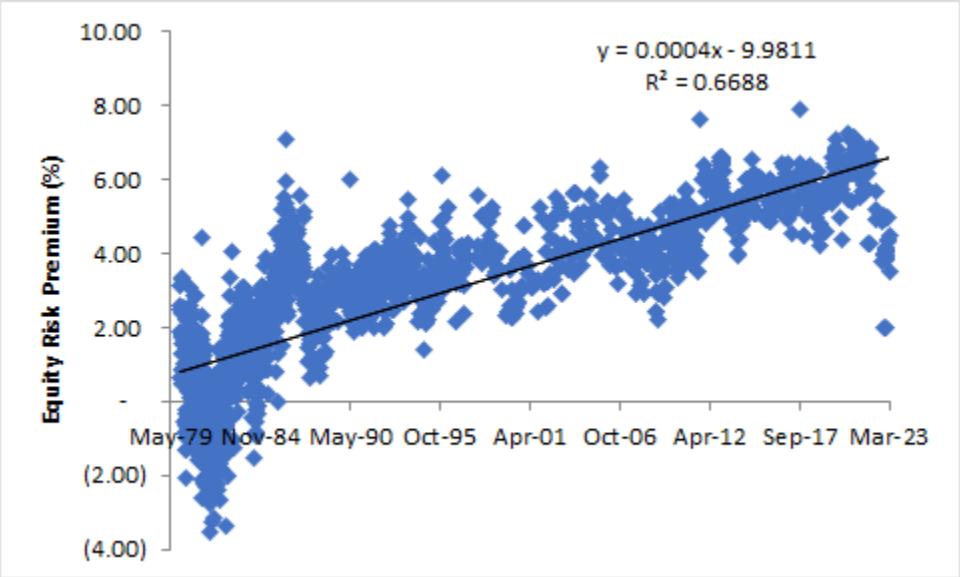
**Q. Do ERPs generally remain static as implied by Mr. Murray's "rule of thumb" analysis?**

A. No, they do not. Mr. Murray's "rule of thumb" analysis ignores the inverse

101 Murray Direct Testimony, at 42-43.
102 *Ibid.*, at 24.

relationship between Equity Risk Premiums and interest rates which I noted in my response to Mr. Walters, and which is consistent with financial literature on the subject[103]. Further, Morin notes, "beginning in 1980, risk premiums varied inversely with the level of interest rates – rising when rates fell and declining when interest rates rose,"[104] Plainly, ERPs are not static and vary with interest rates. As interest rates generally fell prior to mid-2022, the ERP steadily rose, as shown on Chart 5, below:

**Chart 5: Equity Risk Premiums: 1980 – Current[105]**




While ERPs have declined recently as interest rates have increased, if Mr. Murray's "rule of thumb" actually applied, all ERPs would be between 3% and 4%, but as shown, this is clearly not the case. Given Mr. Murray's contradicts the applicability of his "rule of thumb" analysis in this proceeding, as well as the data

103 *See, e.g.*, Robert S. Harris and Felicia C. Marston, *The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts*, Journal of Applied Finance, Vol. 11, No. 1, 2001, at 11-12; Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, Financial Management, Spring 1985, at 33-45.

104 Morin, at 145.

105 Source: Regulatory Research Associates, Bloomberg Professional; see also; Schedule DWD-R-7.

in Chart 5, I recommend that the Commission not give any weight to Mr. Murray's "rule of thumb" analysis.

## VI. CONCLUSION

**Q. Should any or all of the arguments made by the Opposing Witnesses persuade the Commission to lower the ROE it approves for Confluence Rivers below your recommendation?**

A. No, they should not. An overall weighted average cost of capital of 9.86%, which includes a cost of common equity of 11.35% is both reasonable and conservative. It will provide Confluence Rivers with sufficient earnings to enable it to attract necessary new capital efficiently and at a reasonable cost.

**Q. Should any or all of the arguments made by the Opposing Witnesses persuade the Commission to approve a capital structure other than the actual capital structure of the Company?**

A. No, they should not. An approved capital structure other than the Company's actual capital structure may result in a misrepresentation of their cost of capital.

**Q. Does the Company's cost of long-term debt remain reasonable?**

A. Yes, it does.

**Q. Does this conclude your rebuttal testimony?**

A. Yes, it does.

# 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. | ) ) ) ) ) | **File No. WR-2023-0006** |

## VERIFICATION OF DYLAN W. D'ASCENDIS

STATE OF NEW JERSEY )
)
COUNTY OF BURLINGTON )

I, Dylan W. D'Ascendis, of lawful age, under penalty of perjury, and pursuant to Section 509.030, RSMo, state as follows:

1. My name is Dylan W. D'Ascendis. I am employed by ScottMadden, Inc. as Partner. My business address is 3000 Atrium Way, Suite 200, Mount Laurel, NJ 08054. I have been retained by Confluence Rivers Utility Operating Company, Inc. to provide testimony in this case.

2. My rebuttal testimony on behalf of Confluence Rivers Utility Operating Company, Inc. is attached to this verification.

3. My answers to each question in the attached rebuttal testimony are true and correct to the best of my knowledge, information, and belief.

_/s/ Dylan W. D'Ascendix_____
Dylan W. D'Ascendis

_June 29, 2023_____
Date

Confluence Rivers (MO) Utility Operating Company, Inc.
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Supporting Schedules Accompanying the Rebuttal Testimony of
Dylan W. D'Ascendis, CRRA, CVA

Confluence Rivers (MO) Utility Operating Company, Inc.
Calculation of Price Appreciation and Annualized Volatility of
Mr. Walters' Total Proxy Group, Other Utility Indices, and Market Indices since February 3, 2020

| Mr. Walters' Total Proxy Group | Price Appreciation (1) | Annualized Volatility (2) |
|---|---|---|
| Atmos Energy Corporation | -2.74% | 29.61% |
| New Jersey Resources Corporation | 29.22% | 41.44% |
| NiSource Inc. | -3.26% | 31.20% |
| Northwest Natural Holding Company | -35.00% | 40.31% |
| ONE Gas, Inc. | -13.93% | 36.56% |
| Spire Inc. | -16.83% | 33.98% |
| UGI Corporation | -16.96% | 36.33% |
| American Water Works Company, Inc. | 11.25% | 31.33% |
| American States Water Company | 3.77% | 34.86% |
| California Water Service Group | 12.75% | 35.26% |
| Essential Utilities Inc. | -16.19% | 33.42% |
| Middlesex Water Company | 21.82% | 37.64% |
| SJW Group | 7.72% | 37.15% |
| Average | -1.41% | 35.32% |
| Dow Jones Utility Average | 3.20% | 26.66% |
| Utilities Select SPDR Fund | 0.88% | 26.72% |
| Dow Jones Industrial Average | 17.91% | 24.66% |
| S&P 500 | 26.35% | 25.11% |

Notes:
(1) (4/6/2023 price minus 2/3/2020 price) divided by 2/3/2020 price. Stock market was closed on 4/7/2023 in observation of Good Friday.
(2) Standard deviation of returns over the period multiplied by the square root of 252, or number of trading days in a year.

Source: S&P Capital IQ as of 04/07/2023

Confluence Rivers (MO) Utility Operating Company, Inc.
Mr. Walters' DCF Results Adjusted for MSEX's Indicated Result

| Company | 13-Week Average Stock Price [1] | Analysts' Growth [1] | Annualized Dividend [1] | Adjusted Yield [1] | Constant Growth DCF [1] |
|---|---|---|---|---|---|
| American States Water Company | $90.97 | 4.40% | $1.59 | 1.82% | 6.22% |
| American Water Works Company, Inc. | $147.50 | 8.03% | $2.62 | 1.92% | 9.95% |
| California Water Service Group | $59.20 | 11.70% | $1.04 | 1.96% | 13.66% |
| Essential Utilities, Inc. | $44.91 | 6.25% | $1.15 | 2.72% | 8.96% |
| Middlesex Water Company | $80.84 | 2.70% | $1.25 | 1.59% | 4.29% |
| SJW Group | $76.99 | 11.90% | $1.52 | 2.21% | 14.11% |
| Atmos Energy Corporation | $113.91 | 7.75% | $2.96 | 2.80% | 10.55% |
| New Jersey Resources Corporation | $51.18 | 6.41% | $1.56 | 3.24% | 9.65% |
| NiSource Inc. | $27.34 | 6.90% | $1.00 | 3.91% | 10.81% |
| Northwest Natural Holding Company | $48.18 | 3.98% | $1.94 | 4.19% | 8.17% |
| ONE Gas, Inc. | $79.39 | 5.11% | $2.60 | 3.44% | 8.55% |
| Spire Inc. | $70.89 | 4.82% | $2.88 | 4.26% | 9.08% |
| UGI Corporation | $37.64 | 7.40% | $1.44 | 4.11% | 11.51% |
| Average | $71.46 | 6.72% | $1.81 | 2.94% | 9.65% |
| Median | | | | | 9.65% |
| Indicated Average Result [2] | | | | | 9.88% |
| Indicated Median Result [3] | | | | | 9.73% |
| Water Average | | | | | 9.53% |
| Water Median | | | | | 9.45% |
| Indicated Water Average Result [2] | | | | | 10.06% |
| Indicated Water Median Result [3] | | | | | 9.70% |

Notes:
[1] Exhibit CCW-4
[2] Represents the average result of both including and excluding Middlesex Water Company's indicated DCF cost rate (as it is indistinguishable from the yield on A-rated public utility bonds; See, Exhibit CCW-13).
[3] Represents the average of the median results of both including and excluding Middlesex Water Company's indicated DCF cost rate (as it is indistinguishable from the yield on A-rated public utility bonds; See, Exhibit CCW-13).

Confluence Rivers (MO) Utility Operating Company, Inc.
Mr. Walters' Corrected DCF Results

| Company | Zacks [1] | MI [1] | Yahoo! Finance [1] | Value Line [2] | Average |
|---|---|---|---|---|---|
| American States Water Company | NA | NA | 4.40% | 6.50% | 5.45% |
| American Water Works Company, Inc. | 8.08% | 7.72% | 8.28% | 3.00% | 6.77% |
| California Water Service Group | NA | NA | 11.70% | 6.50% | 9.10% |
| Essential Utilities, Inc. | 6.00% | 6.14% | 6.60% | 7.50% | 6.56% |
| Middlesex Water Company | NA | NA | 2.70% | 5.00% | 3.85% |
| SJW Group | NA | 14.00% | 9.80% | 6.00% | 9.93% |
| Atmos Energy Corporation | 7.48% | 7.98% | 7.80% | 7.00% | 7.57% |
| New Jersey Resources Corporation | 6.00% | 7.23% | 6.00% | 5.00% | 6.06% |
| NiSource Inc. | 6.80% | 7.00% | NA | 9.50% | 7.77% |
| Northwest Natural Holding Company | 4.30% | 4.83% | 2.80% | 6.50% | 4.61% |
| ONE Gas, Inc. | 5.00% | 5.33% | 5.00% | 6.00% | 5.33% |
| Spire Inc. | 4.22% | 4.14% | 6.10% | 8.00% | 5.62% |
| UGI Corporation | 8.00% | 8.00% | 6.20% | 6.50% | 7.18% |

| Company | 13-Week Average Stock Price [3] | Average Growth Rate | Annualized Dividend [3] | Adjusted Yield | Constant Growth DCF |
|---|---|---|---|---|---|
| American States Water Company | $90.97 | 5.45% | $1.59 | 1.84% | 7.29% |
| American Water Works Company, Inc. | $147.50 | 6.77% | $2.62 | 1.90% | 8.67% |
| California Water Service Group | $59.20 | 9.10% | $1.04 | 1.92% | 11.02% |
| Essential Utilities, Inc. | $44.91 | 6.56% | $1.15 | 2.73% | 9.29% |
| Middlesex Water Company | $80.84 | 3.85% | $1.25 | 1.61% | 5.46% |
| SJW Group | $76.99 | 9.93% | $1.52 | 2.17% | 12.10% |
| Atmos Energy Corporation | $113.91 | 7.57% | $2.96 | 2.80% | 10.36% |
| New Jersey Resources Corporation | $51.18 | 6.06% | $1.56 | 3.23% | 9.29% |
| NiSource Inc. | $27.34 | 7.77% | $1.00 | 3.94% | 11.71% |
| Northwest Natural Holding Company | $48.18 | 4.61% | $1.94 | 4.21% | 8.82% |
| ONE Gas, Inc. | $79.39 | 5.33% | $2.60 | 3.45% | 8.78% |
| Spire Inc. | $70.89 | 5.62% | $2.88 | 4.29% | 9.91% |
| UGI Corporation | $37.64 | 7.18% | $1.44 | 4.10% | 11.28% |
| Average | $71.46 | 6.60% | $1.81 | 2.94% | 9.54% |
| Median | | | | | 9.29% |
| Indicated Average Result [4] | | | | | 9.71% |
| Indicated Median Result [5] | | | | | 9.44% |
| Water Average | | | | | 8.97% |
| Water Median | | | | | 8.98% |
| Indicated Water Average Result [4] | | | | | 9.32% |
| Indicated Water Median Result [5] | | | | | 9.13% |

Notes:
[1] Exhibit CCW-3
[2] Value Line, as of April 7, 2023
[3] Exhibit CCW-4
[4] Represents the average result of both including and excluding Middlesex Water Company's indicated DCF cost rate (as it is indistinguishable from the yield on A-rated public utility bonds; See, Exhibit CCW-13).
[5] Represents the average of the median results of both including and excluding Middlesex Water Company's indicated DCF cost rate (as it is indistinguishable from the yield on A-rated public utility bonds; See, Exhibit CCW-13).

Confluence Rivers (MO) Utility Operating Company, Inc.
Gross Domestic Product by Industry
from 1947 - 2022

| Industry | 1947 | 2022 | CAGR |
|---|---|---|---|
| Agriculture, forestry, fishing, and hunting | 19.9 | 288.9 | 3.63% |
| Mining | 5.8 | 483.5 | 6.07% |
| Utilities | 3.5 | 440.2 | **6.66%** |
| Construction | 8.9 | 1,007.0 | **6.51%** |
| Manufacturing | 63.4 | 2,793.7 | 5.18% |
| Wholesale trade | 15.6 | 1,613.3 | **6.38%** |
| Retail trade | 23.2 | 1,471.5 | 5.69% |
| Transportation and warehousing | 14.1 | 815.0 | 5.56% |
| Information | 7.7 | 1,394.6 | **7.18%** |
| Finance, insurance, real estate, rental, and leasing | 25.8 | 5,141.0 | **7.31%** |
| Professional and business services | 8.2 | 3,330.4 | **8.34%** |
| Educational services, health care, and social assistance | 4.6 | 2,139.2 | **8.53%** |
| Arts, entertainment, recreation, accommodation, and food services | 8.0 | 1,062.4 | **6.74%** |
| Other services, except government | 7.5 | 521.7 | 5.82% |
| Government | 33.5 | 2,960.4 | 6.16% |
| Total Gross domestic product | 249.7 | 25,462.8 | 6.36% |

Source: Bureau of Economic Analysis

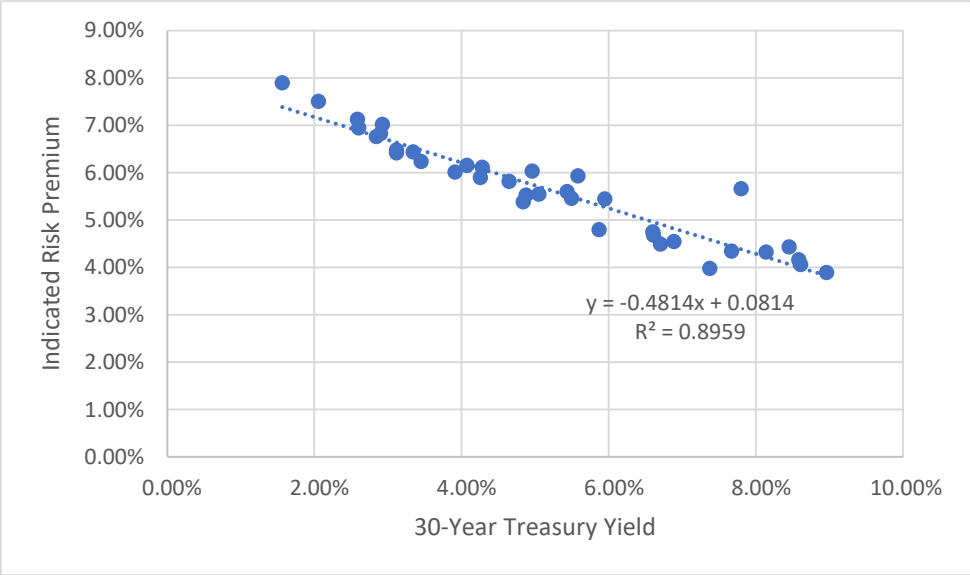
Confluence Rivers (MO) Utility Operating Company, Inc.
Market-to-Book Ratios, Earnings / Book Ratios and
Inflation for Standard & Poor's Industrial Index and
the Standard & Poor's 500 Composite Index
from 1947 through 2021

| | Market-to-Book Ratio (1) | | Earnings / Book Common Equity Ratio (2) | | | |
|---|---|---|---|---|---|---|
| Year | S&P Industrial Index (3) | S&P 500 Composite Index (3) | S&P Industrial Index (3) | S&P 500 Composite Index (3) | Inflation (4) | Earnings / Book Common Equity Ratio - Net of Inflation |
| 1947 | 1.23 | NA | 13.0 % | NA | 9.0 % | 4.0 % NA |
| 1948 | 1.13 | NA | 17.3 | NA | 2.7 | 14.6 NA |
| 1949 | 1.00 | NA | 16.3 | NA | (1.8) | 18.1 NA |
| 1950 | 1.16 | NA | 18.3 | NA | 5.8 | 12.5 NA |
| 1951 | 1.27 | NA | 14.4 | NA | 6.0 | 8.4 NA |
| 1952 | 1.29 | NA | 12.7 | NA | 0.9 | 11.8 NA |
| 1953 | 1.21 | NA | 12.7 | NA | 0.6 | 12.1 NA |
| 1954 | 1.45 | NA | 13.5 | NA | (0.4) | 13.9 NA |
| 1955 | 1.81 | NA | 16.0 | NA | 0.4 | 15.6 NA |
| 1956 | 1.92 | NA | 13.7 | NA | 2.8 | 10.9 NA |
| 1957 | 1.71 | NA | 12.5 | NA | 3.0 | 9.5 NA |
| 1958 | 1.70 | NA | 9.8 | NA | 1.8 | 8.0 NA |
| 1959 | 1.94 | NA | 11.2 | NA | 1.5 | 9.7 NA |
| 1960 | 1.82 | NA | 10.3 | NA | 1.4 | 8.9 NA |
| 1961 | 2.01 | NA | 9.8 | NA | 0.7 | 9.1 NA |
| 1962 | 1.83 | NA | 10.9 | NA | 1.2 | 9.7 NA |
| 1963 | 1.94 | NA | 11.4 | NA | 1.6 | 9.8 NA |
| 1964 | 2.18 | NA | 12.3 | NA | 1.2 | 11.1 NA |
| 1965 | 2.21 | NA | 13.2 | NA | 1.9 | 11.3 NA |
| 1966 | 2.00 | NA | 13.2 | NA | 3.4 | 9.8 NA |
| 1967 | 2.05 | NA | 12.1 | NA | 3.3 | 8.8 NA |
| 1968 | 2.17 | NA | 12.6 | NA | 4.7 | 7.9 NA |
| 1969 | 2.10 | NA | 12.1 | NA | 5.9 | 6.2 NA |
| 1970 | 1.71 | NA | 10.4 | NA | 5.6 | 4.8 NA |
| 1971 | 1.99 | NA | 11.2 | NA | 3.3 | 7.9 NA |
| 1972 | 2.16 | NA | 12.0 | NA | 3.4 | 8.6 NA |
| 1973 | 1.96 | NA | 14.6 | NA | 8.9 | 5.7 NA |
| 1974 | 1.39 | NA | 14.8 | NA | 12.1 | 2.7 NA |
| 1975 | 1.34 | NA | 12.3 | NA | 7.1 | 5.2 NA |
| 1976 | 1.51 | NA | 14.5 | NA | 5.0 | 9.5 NA |
| 1977 | 1.38 | NA | 14.6 | NA | 6.7 | 7.9 NA |
| 1978 | 1.25 | NA | 15.3 | NA | 9.0 | 6.3 NA |
| 1979 | 1.23 | NA | 17.2 | NA | 13.3 | 3.9 NA |
| 1980 | 1.31 | NA | 15.6 | NA | 12.4 | 3.2 NA |
| 1981 | 1.24 | NA | 14.9 | NA | 8.9 | 6.0 NA |
| 1982 | 1.17 | NA | 11.3 | NA | 3.8 | 7.5 NA |
| 1983 | 1.45 | NA | 12.2 | NA | 3.8 | 8.4 NA |
| 1984 | 1.46 | NA | 14.6 | NA | 4.0 | 10.6 NA |
| 1985 | 1.67 | NA | 12.2 | NA | 3.8 | 8.4 NA |
| 1986 | 2.02 | NA | 11.5 | NA | 1.2 | 10.3 NA |
| 1987 | 2.50 | NA | 15.7 | NA | 4.3 | 11.4 NA |
| 1988 | 2.13 | NA | 19.0 | NA | 4.4 | 14.6 NA |
| 1989 | 2.56 | NA | 18.5 | NA | 4.6 | 13.9 NA |
| 1990 | 2.63 | NA | 16.3 | NA | 6.3 | 10.0 NA |
| 1991 | 2.77 | NA | 10.8 | NA | 3.0 | 7.8 NA |
| 1992 | 3.29 | NA | 13.0 | NA | 3.0 | 10.0 NA |
| 1993 | 3.72 | NA | 15.7 | NA | 2.8 | 12.9 NA |
| 1994 | 3.73 | NA | 23.0 | NA | 2.6 | 20.4 NA |
| 1995 | 4.06 | 2.64 | 22.9 | 16.0 % | 2.5 | 20.4 13.5 % |
| 1996 | 4.79 | 3.00 | 24.8 | 16.8 | 3.4 | 21.4 13.4 |
| 1997 | 5.88 | 3.53 | 24.6 | 16.3 | 1.7 | 22.9 14.6 |
| 1998 | 7.13 | 4.16 | 21.3 | 14.5 | 1.6 | 19.7 12.9 |
| 1999 | 8.27 | 4.76 | 25.2 | 17.1 | 2.7 | 22.5 14.4 |
| 2000 | 7.51 | 4.51 | 23.9 | 16.2 | 3.4 | 20.5 12.8 |
| 2001 | NA | 3.50 | NA | 7.4 | 1.6 | NA 5.8 |
| 2002 | NA | 2.93 | NA | 8.3 | 2.5 | NA 5.8 |
| 2003 | NA | 2.78 | NA | 14.1 | 2.0 | NA 12.1 |
| 2004 | NA | 2.91 | NA | 15.3 | 3.3 | NA 12.0 |
| 2005 | NA | 2.78 | NA | 16.4 | 3.3 | NA 13.1 |
| 2006 | NA | 2.77 | NA | 17.0 | 2.5 | NA 14.5 |
| 2007 | NA | 2.84 | NA | 12.8 | 4.1 | NA 8.7 |
| 2008 | NA | 2.24 | NA | 3.0 | (0.0) | NA 3.0 |
| 2009 | NA | 1.87 | NA | 10.6 | 2.8 | NA 7.8 |
| 2010 | NA | 2.09 | NA | 14.2 | 1.4 | NA 12.8 |
| 2011 | NA | 2.07 | NA | 14.6 | 3.1 | NA 11.5 |
| 2012 | NA | 2.14 | NA | 13.5 | 1.8 | NA 11.8 |
| 2013 | NA | 2.39 | NA | 14.5 | 1.5 | NA 13.0 |
| 2014 | NA | 2.66 | NA | 14.2 | 0.7 | NA 13.5 |
| 2015 | NA | 2.73 | NA | 11.8 | 0.6 | NA 11.2 |
| 2016 | NA | 2.72 | NA | 12.5 | 2.1 | NA 10.5 |
| 2017 | NA | 3.10 | NA | 13.8 | 2.1 | NA 11.6 |
| 2018 | NA | 3.15 | NA | 15.8 | 2.0 | NA 13.8 |
| 2019 | NA | 3.22 | NA | 15.8 | 2.3 | NA 13.5 |
| 2020 | NA | 3.25 | NA | 10.2 | 1.3 | NA 8.9 |
| 2021 | NA | 4.39 | NA | 20.4 | 7.2 | NA 13.3 |

Notes:
(1) Market-to-Book Ratio equals average of the high and low market price for the year divided by the average book value.
(2) Earnings/Book equals earnings per share for the year divided by the average book
(3) On January 2, 2001 Standard & Poor's released Global Industry Classification Standard (GICS) price indexes for all Standard & Poor's U.S. indexes. As a result, all S&P Indexes have been calculated with a common base of 100 at a start date of December 31, 1994. Also, the GICS industrial sector is not comparable to the former S&P Industrial Index and data for the former S&P Industrial Index was discontinued.
(4) As measured by the Consumer Price Index (CPI).

Sources of Information:
Standard & Poor's Security Price Index Record, 2000 Edition, p. 40.
Standard & Poor's Statistical Service, Current Statistics, March 2013, p. 30.
Kroll SBBI 2023 Yearbook Appendix A Tables, Stocks, Bonds, Bills, and Inflation | 1926-2022.
finance.yahoo.com
Bloomberg Professional Services

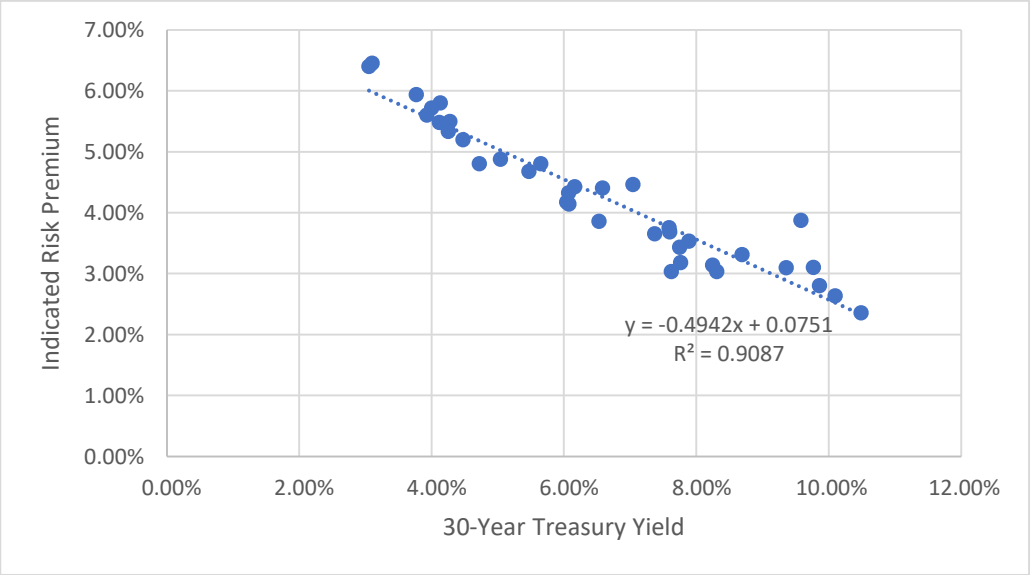
Confluence Rivers (MO) Utility Operating Company, Inc.
Mr. Walters' Corrected Risk Premium Model - Treasury Bond




| Constant | Slope | Prospective 30-Year Treasury Yield | Risk Premium | Return on Equity |
|---|---|---|---|---|
| 8.14% | (0.48) | 3.84% | 6.29% | 10.13% |

Sources: Exhibit CCW-10, pg. 1; Blue Chip Financial Forecasts, March 31, 2023 and December 2, 2022

Confluence Rivers (MO) Utility Operating Company, Inc.
Mr. Walters' Corrected Risk Premium Model - A Utility Bond




| Constant | Slope | A Utility Yield | Risk Premium | Return on Equity |
|---|---|---|---|---|
| 7.51% | (0.49) | 5.54% | 4.78% | 10.31% |

Sources: Exhibit CCW-11, pg. 1; Bloomberg Professional Services; Blue Chip Financial Forecasts, March 31, 2023 and December 2, 2022

Confluence Rivers (MO) Utility Operating Company, Inc.
Mr. Walters' Corrected CAPM

| | Total Proxy Group | Water Proxy Group |
|---|---|---|
| Risk-Free Rate (1) | 3.84 % | |
| Market Risk Premium (2) | 7.54 % | |
| Beta (3) | 0.85 | 0.80 |
| CAPM | 10.25 % | 9.87 % |
| ECAPM | 10.53 % | 10.25 % |

Risk-Free Rate (1)

| | |
|---|---|
| Second Quarter 2023 | 3.90 % |
| Third Quarter 2023 | 3.80 |
| Fourth Quarter 2023 | 3.80 |
| First Quarter 2024 | 3.80 |
| Second Quarter 2024 | 3.80 |
| Third Quarter 2024 | 3.70 |
| 2024-2028 | 3.90 |
| 2029-2033 | 4.00 |
| | 3.84 % |

Market Risk Premium (2)

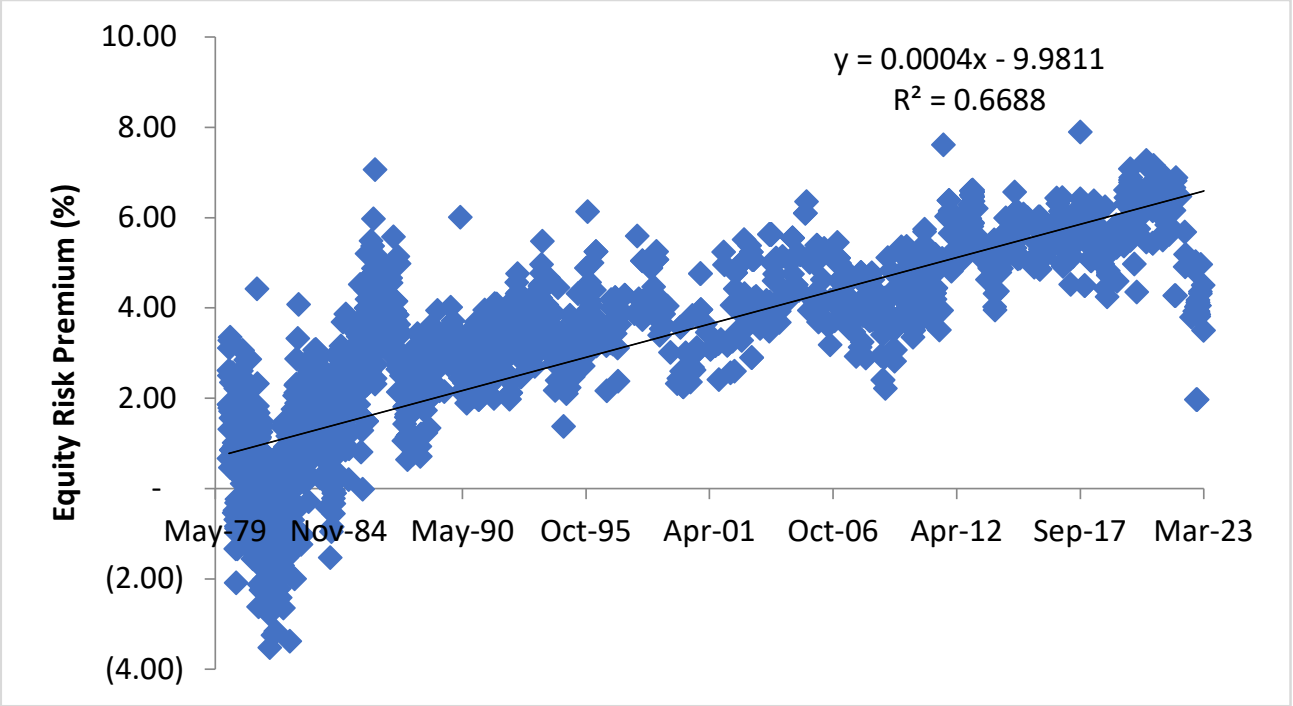
| | |
|---|---|
| Expected Market Return | 11.38 % |
| Less - Risk Free Rate | 3.84 |
| Market Risk Premium: | 7.54 % |

Beta (3)

| Mr. Walters' Total Proxy Group | Value Line Adjusted Beta (3) |
|---|---|
| American States Water Company | 0.70 |
| American Water Works Company, Inc. | 0.90 |
| California Water Service Group | 0.70 |
| Essential Utilities, Inc. | 0.95 |
| Middlesex Water Company | 0.75 |
| SJW Group | 0.80 |
| Atmos Energy Corporation | 0.85 |
| New Jersey Resources Corporation | 0.95 |
| NiSource Inc. | 0.90 |
| Northwest Natural Holding Company | 0.80 |
| ONE Gas, Inc. | 0.80 |
| Spire Inc. | 0.85 |
| UGI Corporation | 1.05 |
| Mean | 0.85 |
| Water Mean | 0.80 |

Notes:
(1) Blue Chip Financial Forecasts, December 2, 2022, and March 31, 2023
(2) Exhibit CCW-15, page 2
(3) Exhibit CCW-14, page 1 (Value Line Betas)

# Confluence Rivers (MO) Utility Operating Company, Inc.
# Historical ERPs in Response to Mr. Murray's Rule of Thumb Analysis




Sources: Regulatory Research Associates; Bloomberg Professional Services