STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF INDIANA-AMERICAN WATER COMPANY, INC. FOR (1) AUTHORITY TO INCREASE ITS RATES AND CHARGES FOR WATER AND WASTEWATER UTILITY SERVICE THROUGH A THREE-STEP RATE IMPLEMENTATION, (2) APPROVAL OF NEW SCHEDULES OF RATES AND CHARGES APPLICABLE TO WATER AND WASTEWATER UTILITY SERVICE, INCLUDING A NEW UNIVERSAL AFFORDABILITY RATE, (3) APPROVAL OF REVISED DEPRECIATION RATES APPLICABLE TO WATER AND WASTEWATER PLANT IN SERVICE, (4) APPROVAL OF NECESSARY AND APPROPRIATE ACCOUNTING RELIEF, (5) APPROVAL OF THE EXTENSION OF SERVICE TO AN INFRASTRUCTURE DEVELOPMENT ZONE IN MONTGOMERY COUNTY, INDIANA AND AUTHORITY TO IMPLEMENT A SURCHARGE UNDER IND. CODE § 8-1-2-46.2, AND (6) APPROVAL OF PETITIONER'S PLANS TO DEVELOP FUTURE WATER SOURCES OF SUPPLY UNDER IND. CODE § 8-1-2-23.5.	)	**CAUSE NO. 45870**

PUBLIC'S EXHIBIT NO. 6

TESTIMONY OF SHAWN DELLINGER

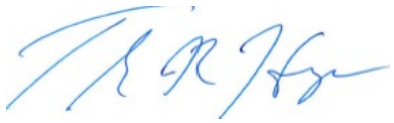
ON BEHALF OF

THE INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

July 21, 2023

Respectfully submitted,

INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR



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CERTIFICATE OF SERVICE

This is to certify that a copy of the ***Public's Exhibit No. 6 OUCC's Testimony of Shawn Dellinger on behalf of the OUCC*** has been served upon the following in the captioned proceeding by electronic service on July 21, 2023.

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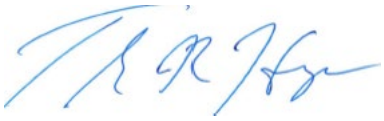

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TESTIMONY OF OUCC WITNESS SHAWN DELLINGER, CRRA
CAUSE NO. 45870
INDIANA-AMERICAN WATER COMPANY, INC.

I. INTRODUCTION

Q: Please state your name and business address.

A: My name is Shawn Dellinger, and my business address is 115 W. Washington St., Suite 1500 South, Indianapolis, IN 46204.

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

A: I am employed by the Indiana Office of Utility Consumer Counselor ("OUCC") as a Senior Utility Analyst for the OUCC's Water/Wastewater division. My focus is on financial issues.

Q: Please describe your educational background and experience.

A: My educational background and experience are described in Appendix A. I am a certified rate of return analyst (CRRA designation), which is a professional designation awarded from the Society of Utility and Regulatory Financial Analysts.

Q: What is the purpose of your testimony?

A: Indiana American Water Company, Inc. ("Indiana American," "INAWC," or "Petitioner") has requested higher revenue requirements in the present cause. My testimony specifically addresses the cost of capital component of that request. As part of the cost of capital, I primarily address the return on equity ("ROE") (also, cost of equity "COE") component and the capital structure. I also address the declining use adjustment for residential customers that is being requesting by Indiana American in this cause.

Q: What did you do to prepare your testimony?

A: I attended a pre-filing meeting with Petitioner on March 14, 2023. I read the Verified Petition, with an emphasis on the testimonies of INAWC witnesses Ann E. Bulkley and Charles B. Rea. I prepared discovery questions and reviewed discovery responses. I reviewed previous testimony and orders regarding Indiana American, as well as other testimony from Ms. Bulkley and American Water Works Company, Inc. ("American Water Works") public utilities in other jurisdictions. I reviewed and incorporated many documents which will be referenced throughout this testimony regarding equity valuations, interest rates, growth rates, and general economic conditions.

Q: Do you have any attachments included with your testimony?

A: Yes. My list of attachments may be found as Appendix B.

Q: To the extent you do not address a specific item or adjustment, should that be construed to mean you agree with Petitioner's proposal?

A: No. Not addressing a specific item or adjustment Petitioner proposes does not indicate my agreement or approval. Rather, the scope of my testimony is limited to the specific items addressed herein.

Q: How will your testimony be organized?

A: I will lay out my testimony in broad categories as shown below, with subsections as appropriate. I have included Appendices A and B for my qualifications and a list of my attachments, and Appendices C-H for additional technical testimony and analyses applicable to sections included below.

1. Introduction
2. Summary of my Recommendations
3. Methods and Models Used for Calculating ROE, and the Inputs Required

4. Capital Structure and Impact on Affordability
5. Flotation Costs
6. Declining Use Adjustment (Residential)
7. Recommendations
8. Appendices
    a. Qualifications
    b. List of Attachments
    c. Discounted Cash Flow Analysis
    d. General Concerns with Analyst Forecasts
    e. Potential Bias in Analyst Forecasts
    f. Use of Historical Growth Estimates
    g. Capital Asset Pricing Model (CAPM) Analysis
    h. Inflation

II. SUMMARY OF MY RECOMMENDATIONS:

Q: Please provide a summary of your recommendations for ROE.

A: My recommended return on equity is 9.0%. This is derived from an analysis of the Constant Growth Discounted Cash Flow model ("DCF"), the Two Stage DCF model ("DCF-2 Stage"), the Capital Asset Pricing Model ("CAPM"), and empirical Capital Asset Pricing Model ("ECAPM").

Q: Please provide a summary of your recommendations for the residential declining use adjustment.

A: I recommend a declining use adjustment of 436 gallons per year per residential customer, which is approximately 0.89% annually, resulting in monthly usage of 4,019 gallons per

month per residential customer in the linking year of calendar 2023 and 3,971 gallons per month in the test year.

III. METHODS AND MODELS USED FOR CALCULATING ROE, AND THE INPUTS REQUIRED.

Q: Broadly, what is the purpose of an ROE, and why is it important?

A: Petitioner's witness Ann Bulkley discusses the purpose of establishing an appropriate ROE in her Section IV, Regulatory Guidelines from pages 8-11 in her testimony. I broadly agree with this section of her testimony. I would add, simply, that the ROE is a cost to the utility, just as is the cost of debt. (A return on equity would be a term used from the perspective of the investor; a cost of equity would be the corresponding term from the perspective of the utility.) It is also, therefore, a cost to ratepayers.

Q: How does your approach to these models differ from Ms. Bulkley's?

A: First, unlike Ms. Bulkley, I used a two-stage DCF model to address concerns resulting from the single-stage (Constant Growth) DCF model. Second, I rely on a wider range of data sources. Where Ms. Bulkley relies on two data sources to calculate her Beta, I rely on six. Third, I provide a specific recommendation for each model, based on my preferred inputs, rather than just a range. Fourth, I incorporate historical weights in my growth calculations, whereas Ms. Bulkley does not.

Q: Are there any other differences in approach as to market prices between Ms. Bulkley and yourself?

A: Yes. Ms. Bulkley relies on longer time frames for the "the market price" than I tend to. I place more reliance on the efficient market hypothesis ("EMH"), which states that, in essence, all publicly available information is reflected in a security's price. Ms. Bulkley implicitly disregards this principal by stating that utility stocks are overvalued, the prices

will eventually come down, and that this therefore means the DCF models cannot be relied upon.[1]

It is perhaps coincidence that the DCF models produce the lowest ROE calculations in her testimony, but regardless, Ms. Bulkley's assumption that utility stock prices are overvalued should not be used as a basis to discredit or discount the DCF model or be used as a basis for a decision on an appropriate, reasonable ROE. The efficient market hypothesis is a bedrock principal upon which both the DCF model and the CAPM rest. Without this assumption, these models lose their validity. If one does not believe the market provides rational pricing, it follows there cannot be reliance on those models. It is illogical to rely on the DCF model and CAPM without consistently following their precepts.[2]

Although Ms. Bulkley relies on the DCF model (and thus, implicitly the EMH) when determining her growth rate for the S&P 500 in her CAPM calculations, she insists it should be disregarded in the context of utilities because of her premise that utility stocks are "overvalued." I disagree with this premise. When buying and selling, market participants make judgements as to what individual stocks they believe are over-valued or under-valued. For every buyer, there is a seller, and hence, generally for everyone who

[1] Broadly this is my understanding of her testimony in section V.D. pages 20-26. To quote from page 26, lines 7-10: "the expected underperformance of utilities means that DCF models using recent historical data likely underestimate investor's required return over the period that rates will be in effect. Therefore, this expected change in market conditions supports consideration of the higher end of the range of cost of equity results produced by the DCF models."

[2] To quote Mr. Michael Dempsey from The Capital Asset Pricing Model (CAPM): The History of a Failed Revolutionary Idea in Finance?: "Modern Academic finance is built on the proposition that markets are fundamentally rational. The foundational model of market rationality is the CAPM. The Implications of rejecting market rationality as encapsulated by the CAPM are very considerable. In capturing the idea that markets are inherently rational, the CAPM has made finance an appropriate subject for econometric studies." Dempsey, Michael J. "The Capital Asset Pricing Model (CAPM): The History of a Failed Revolutionary Idea in Finance?" *Abacus* 49, Supplement (2013): 7.

believes a stock is overpriced and is thus willing to sell, there is someone willing to buy that stock, and hence believes the stock in underpriced. This is what makes a market; buyers and sellers arriving at a market clearing price.

Q: What models are available for calculating ROE?

A: In addition to the DCF and CAPM (and their derivatives), which I discussed above, there are the comparable earnings method, risk premium method, the arbitrage pricing method, earnings price ratio analysis, market to book method, and others. Ms. Bulkley limited her analysis to versions of the DCF and the CAPM, and the IURC has traditionally relied on these two models, so I have also confined my analysis to these two models and their derivations.

Q: What models did Ms. Bulkley use in her testimony?

A: Ms. Bulkley used the Constant Growth DCF (calculated with both the Mean and Median estimates incorporated), a CAPM, and an ECAPM. Broadly, the DCF model takes the dividends a company (or a group of companies) is currently paying and grows this amount by a certain percentage each future year. A CAPM broadly takes the risk-free interest rate and adds a percentage (a premium or return due to risk) based on the overall equity market excess return modified by the riskiness of the individual company (or group of companies).

Q: Did you use the same models?

A: Yes. I provide a result for each of the models Ms. Bulkley used. I also performed a 2-stage DCF model analysis, which she did not perform.

Q: What inputs need to be determined to use the DCF and CAPM models?

A: As used here, the Constant Growth DCF has two inputs - the current dividend rate and the growth rate in the future. The CAPM relies on the risk-free interest rate, the riskiness (or Beta) of the company or companies being reviewed, and the equity market premium (or

the excess return an investor receives for investing in equities rather than risk-free bonds). Establishing the appropriate Proxy Group of companies is a reasonable first step for determining Beta and other inputs.

A. Proxy Group

Q: What is the purpose of a proxy group in determining an appropriate cost of equity?

A: A proxy group represents a group of similar companies that can be used to benchmark certain features of the company being analyzed. They can provide information for similar companies on measures like growth, dividends, riskiness, and valuations. For the specific purposes of determining a cost of equity, the proxy group provides inputs for dividend yields, growth rates, and betas (risk).

Q: How do you select an appropriate proxy group?

A: In an ideal world, as a CRRA analyst determining a reasonable cost of equity, I would start with a very large list of similar companies and apply filters to the list to target, more exactly, the best matches to the company analyzed. Companies in the proxy group should be as similar as possible to the company being analyzed, with due consideration to the industry, portion of that industry, size, geographic location, financial leverage, structure, and potentially other factors. Generally, only publicly traded companies will have information available for analysis, which is a limiting factor.[3] For some models, the presence of dividends should be a factor to consider. All things being equal, it is better to have more companies in the proxy group than fewer, although the robustness of the data set gained by adding more companies must be balanced by the loss of focus and similarity

[3] In this context, I mean information and reporting provided by market analysts like Value Line, Bloomberg, Zacks, etc., which provide data such as dividends, growth estimates, or betas (riskiness).

of expanding the proxy group by too significant of a degree.

Q: Does your proxy group only include water utilities?

A: No. I included some gas utilities because doing so ultimately provides a more robust and more meaningful proxy group, keeping in mind that the number of public water utilities to choose from is relatively limited. Ms. Bulkley used water, gas, and electric utilities in her proxy group, I discuss differences in the proxy group selection between Ms. Bulkley and myself below.

Q: Which water utilities are in your proxy group?

A: There are a total of ten companies in the Value Line Water Utility Industry. (Please see OUCC Attachment SD-1.) Of these, I did not include the four smallest - Artesian Resources Corporation, Consolidated Water, Global Water Resources, and York Water. I did not include these companies primarily due to their lack of robust analyst coverage, which is indirectly due to their size.[4] I included the remaining six companies in my proxy group, one of which is Essential Utilities, Inc. ("Essential"), which I included despite a large percentage of its total stock value being derived from its gas utility business.[5] American Water Works is the largest component of the water utility industry per Value Line.

Q: Did Ms. Bulkley include American Water Works, the parent company of Indiana American, in her proxy group?

A: She did not. She did include all the other water utilities, which are also in my proxy group.

[4] Analyst coverage is referring to companies such as Value Line, Zacks, S&P, etc. providing estimates on growth or Beta.

[5] I have not done a specific analysis of what percentage of the market cap of Essential (WTRG) is from the Aqua operations and what is from the Peoples Gas operations. However, in 2022, the natural gas segment generated more revenue than the water segment ($1.14 Billion vs. $1.08 Billion).

Indiana American represents approximately 10% of the market cap of American Water Works, and the remainder of the subsidiaries under the American Water Works umbrella are the best proxies for Indiana American.[6] Therefore, American Water Works is not only a valid proxy, but essentially captures the best proxies available for Indiana American.

Q: What gas utilities did you include in your proxy group and why?

A: I included Atmos Energy, Northwest Natural Gas Company, ONE Gas, and Spire, Inc. I began with component gas and electric utilities in Ms. Bulkley's preferred proxy group and eliminated the electric utilities and some gas companies for reasons I address below. I did not identify any additional suitable gas utilities that were not included in Ms. Bulkley's proxy group that I would consider necessary or beneficial. In my professional opinion, gas utilities are most similar to water utilities in their operations and structure (for instance, no generating assets, same general regulatory framework, etc.) of any other industry.

Q: What is your proxy group?

A: Please find Table SD-1 below with my proxy group.

[6] This is based on regulated customer counts, with Indiana American representing approximately 9.6% of the total for American Water Works. This information is from the June 2023 investor report, page 4, and is reported as of December 31, 2022. While acknowledging this may be an imperfect gauge of overall value, and not including the military services group within this calculation, broadly the 10% of total market cap estimate is close enough for my purposes here without further analysis. The other regulated subsidiaries (by location) are Pennsylvania (22.5%), New Jersey (20.9%), Missouri (14.6%), Illinois (10.7%), California (5.6%), West Virginia (4.9%) and Other (11.2%).

Table SD-1

Company	Ticker
American Water Works	AWK
American States Water Company	AWR
California Water Service Group	CWT
Essential Utilities, Inc.	WTRG
Middlesex Water Company	MSEX
SJW Group	SJW
Atmos Energy Corporation	ATO
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
Spire, Inc.	SR

Q: What companies did Ms. Bulkley include that you did not?

A: Ms. Bulkley's proxy group includes New Jersey Resources Corporation, NiSource Inc, and Eversource Energy. My group does not include these three companies.

Q: Why did you not include New Jersey Resources Corporation in your proxy group?

A: Ms. Bulkley screened for a percentage of regulated operating income in her proxy group and set this threshold at more than 60%. This threshold of regulated operating income is too low to include as an appropriate proxy. I do not consider New Jersey Resources Corporation to be a suitable proxy because it only earns 67.22% of its income from regulated activities. In other words, almost one third of its operating income is from non-regulated sources. The other gas companies in both my own and Ms. Bulkley's proxy groups have regulated operating income of 100% (Atmos, ONE Gas), 99.84% (Northwest), and 91.43% (Spire).[7]

Q: Why did you not include NiSource or Eversource Energy in your proxy group?

A: Neither is exclusively a gas utility (or a water utility). Per S&P Global, NiSource is

[7] Ms. Bulkley Attachment AEB-2.

considered a multi-utility as its primary industry, and Eversource is considered an electric utility. This eliminates them from consideration as appropriate proxy group candidates.

Q: Does the inclusion of gas utilities in your proxy group change the overall Beta, dividend yields, or growth rates from what they would be if the proxy group was based exclusively on water utilities?

A: Yes. The relevant betas, dividend yields, and growth rates for the gas utilities, the water utilities, and the proxy group, as a whole are shown below.[8] The fact that the gas utilities produce a higher ROE than the water utilities by 80 basis points (from 8.68% to 9.48%) in the Constant Growth DCF model raises issues as to whether they should be included; however, as stated previously, in this case, the robustness gained by increasing the number of companies in the proxy group outweighs the potential adjustments to the relevant inputs.

Table SD-2

Company	Expected Dividend Yield-1 Week	Average Future Earnings Growth Rate	Average Historical Growth Rate	Overall Growth Rate (80% Future Earnings, 20% Historical)	Mean ROE-7 Day Stock Price	Average
American Water Works	2.00%	6.78%	9.33%	7.29%	9.29%	
American States Water Company	1.88%	7.80%	7.17%	7.67%	9.55%	
California Water Service Group	2.01%	7.33%	7.42%	7.35%	9.36%	
Essential Utilities, Inc.	2.86%	6.06%	8.17%	6.48%	9.34%	
Middlesex Water Company	1.56%	3.85%	7.83%	4.65%	6.20%	
SJW Group	2.15%	6.03%	6.83%	6.19%	8.34%	8.68%
Atmos Energy Corporation	2.62%	7.56%	9.00%	7.85%	10.47%	
Northwest Natural Gas Company	4.58%	4.49%	0.83%	3.76%	8.34%	
ONE Gas, Inc.	3.35%	5.46%	7.33%	5.83%	9.18%	
Spire, Inc.	4.54%	5.69%	4.17%	5.39%	9.93%	9.48%
Mean	2.76%	6.11%	6.81%	6.25%	9.00%	

[8] This table only shows the expected dividend yield based on a 7-day average closing stock price, the average (mean) beta from all six sources, the average (mean) historical growth rate, the overall growth rate weighted 80% forecasted earnings and 20% historical, and the resultant ROE. More details may be found in OUCC Attachment SD-2.

B. The DCF Model

Q: Please briefly explain the DCF model.

A: The DCF model takes dividends from a group of companies (i.e., the proxy group) and grows those payments in perpetuity.[9] Because a dollar in the future is not worth as much as a dollar today, it discounts those payments back to the present-day value by using a discount rate, which is the return on equity in this context.

Q: Do you have detailed discussions of the DCF model in your appendices?

A: Yes. Appendix C goes into detail on the structure of the DCF, shows how specific inputs were calculated, and describes some differences between Ms. Bulkley's approach and my own.

Q: How does your DCF model compare with Ms. Bulkley's?

A: Ms. Bulkley prepared two versions of the Constant Growth DCF model, one of which used mean calculations and the other of which used median calculations.[10] In essence these are different presentations of the same model. I also calculated both a mean and a median ROE for my proxy group with a Constant Growth DCF model.

We do not agree on the specific results of the model, but our differences with this model are not as vast as the differences regarding the CAPM model. My preferred result (which is based on the 7-day average stock price and a blended future and historical growth rate) results in an average (mean) ROE of 9.0%. Ms. Bulkley provides a range of 8.61%-

[9] This is a broad description of the DCF in the context of a utility rate case. Not all DCF models are structured in perpetuity, involve dividends, etc.

[10] Each stock in her proxy group has an ROE determined by the expected dividend yield and the lowest of the three earnings growth estimates she used (among Value Line, Yahoo! Finance, and Zacks), the average of the three, and the highest of the three. This provided her range. She then took all resultant ROEs determined by a specific method and averaged them (the mean) or took the median of these results.

10.99%. Although she does not present her results in this way, the midpoint of these results is 9.8%, and her calculation based upon the average growth rate for her Mean calculation is 9.71%.

Q: What areas of disagreement cause the difference in the results of the Constant Growth DCF between Ms. Bulkley and yourself?

A: We have different inputs in three primary areas. First, we have different proxy groups as I have described. Second, we use different resources to determine our growth estimates. Third, I included historical growth factors including earnings, book value and dividends growth over the past five and ten years and used a weighted average of the results of the forecasted earnings growth and the historical earnings growth.

Although I disagree on the specific expected dividends, this difference is minimal, and is generally because I am using more updated numbers due to my testimony being written later, as well as focusing on a 7-day average stock price rather than her preferred metrics (although I do provide all the metrics in my attachments).

Q: Please explain your preferred inputs.

A: My preferences are for using a 7-day average price to determine the yield of a stock; using all forecasted "long-term" earnings growth estimates on an equal weighting; calculating historical growth measures equally weighted between dividends, book values, and earnings for both 5- and 10-year historical periods; and blending the forecast and historical growth figures at an 80%/20% weighting. Finally, I consider the mean to be a better approach to calculating the ROE, as the median is more appropriate when outliers are present, and in my professional opinion the analyst should discard significant outliers, rather than relying on a median presentation of the results. 7-day stock prices reflect the best balance between the current market price, while addressing day to day volatility that may result from using

only the spot (or current) price. I believe using all analysts as equally valid sources of forecasted growth is appropriate and alleviates potential bias concerns, and incorporating historical growth numbers is consistent with past commission practice and provides a grounding to the forecasts. I consider a 20% weighting of the historical numbers is appropriate, because the purpose of this model is to forecast future growth, not historical.

Q: What are the results of your Constant Growth DCF model?

A: My DCF results in a recommended ROE of 9.0% on a mean basis, which I prefer over a median basis as discussed. The same results calculated in a median fashion result in a 9.32% ROE. Please see table SD-3 below.

Table SD-3

Company	Annualized Dividend	Stock Price	Expected Dividend Yield	Average Future Earnings Growth Rate	Average Historical Growth Rate	Overall Blended Growth Rate	ROE
American Water Works	2.83	146.65	2.00%	6.78%	9.33%	7.29%	9.29%
American States Water Company	1.59	87.882	1.88%	7.80%	7.17%	7.67%	9.55%
California Water Service Group	1.04	53.578	2.01%	7.33%	7.42%	7.35%	9.36%
Essential Utilities, Inc.	1.15	41.444	2.86%	6.06%	8.17%	6.48%	9.34%
Middlesex Water Company	1.25	82.146	1.56%	3.85%	7.83%	4.65%	6.20%
SJW Group	1.52	72.888	2.15%	6.03%	6.83%	6.19%	8.34%
Atmos Energy Corporation	2.96	117.392	2.62%	7.56%	9.00%	7.85%	10.47%
Northwest Natural Gas Company	1.94	43.154	4.58%	4.49%	0.83%	3.76%	8.34%
ONE Gas, Inc.	2.6	79.91	3.35%	5.46%	7.33%	5.83%	9.18%
Spire, Inc.	2.88	65.104	4.54%	5.69%	4.17%	5.39%	9.93%
Mean			2.76%	6.11%	6.81%	6.25%	9.00%
Median			2.39%	6.05%	7.38%	6.34%	9.32%

Based on 7 Day Average Stock prices
Based on an 80% weighting for future earnings growth and 20% for historical growth

Q: What is the biggest weakness of the Constant Growth DCF model, and how did you compensate for that weakness?

A: The biggest difficulty when implementing the Constant Growth DCF model is selecting the appropriate growth rate. First, there can be much discrepancy in the inputs used to determine the current growth rate. Second, the "long-term" earnings estimates are intended to cover forecasts between three and five years. However, the model projects those earnings estimates over perpetuity. This constant growth is a simplifying assumption, but

it is obviously flawed if it forecasts a company to grow faster than the entire US economy in perpetuity.[11] I addressed this concern by using a 2-stage model.

Q: Please explain the 2-stage DCF model.

A: A 2-stage DCF model addresses the tension between the intermediate term analyst projections and the long-term that those projections are applied to and which the model uses to determine a value.[12] It does this by using one growth rate for the initial stage, and a second growth rate for the terminal (or long-run) stage.

Q: What assumptions did you make for the 2-stage DCF model?

A: I used the same initial dividends and initial growth inputs I used for the constant growth model, based on appropriate inputs of dividends calculated over 7-day average stock prices and the weighted growth rate incorporating forecasts and historical data. I set the time period of the first (initial) phase for 15 years. For growth in the second (terminal) phase I used the current estimates of nominal GDP growth. Appendix C offers further details. The results are as follows.

Table SD-4

	Median OUCC Recommended Inputs	Mean OUCC Recommended Inputs	
Price	$ 100.00	$ 100.00	
Current DPS	$ 2.30	$ 2.68	Current Dividend, mean, based on one week average stock price
Growth rate, 1st Stage	6.34%	6.25%	Overall Weighted Growth Rate
Growth rate, 2nd Stage	4.00%	4.00%	Nominal GDP growth
Years in 1st stage	15	15	Number of Years the 1st Stage Growth Rate applies
COE (r)	7.16%	7.61%	

[11] This is addressed in more detail later in my testimony, see pages 56-58.

[12] By intermediate term, I am referring to the 3 to 5-year time period over which these earnings forecasts are generally covering. Long-term means periods beyond that, but especially out beyond 15-20 years, to hundreds of years in the future.

C. Capital Asset Pricing Model

Q: Please explain the Capital Asset Pricing Model (CAPM).

A: Briefly, the CAPM takes the current risk-free rate of interest and adds an amount based on the expected additional return for holding equity vs risk-free debt. This excess return is then modified by the riskiness of the equity (or equities) being examined vs. the market.

Q: Do you have detailed discussions of the CAPM model in your appendices?

A: Yes. Appendix G goes into detail on the structure of the CAPM and how specific inputs were calculated.

Q: What inputs are required for the CAPM?

A: The CAPM relies on (1) a determination of the risk-free rate of interest; (2) the equity risk premium (i.e., the amount of excess returns an investor expects investing in equities over risk-free bonds), and (3) Beta, which is a measure of risk relative to the market as a whole.

Q: How did you determine the risk-free rate of interest?

A: I calculated the risk-free rate of interest for a variety of time periods and for both ten-year and thirty-year maturities.

Table SD-5

Interest Rates (as of June 15, 2023)	Average Yield Over					
	Spot	7-Day	1 Month	3 Month	6 Month	Long Term Forecast
10 Year Treasury Yield	3.72	3.77	3.55	3.50	3.48	3.60%
30 year Treasury Yield	3.85	3.89	3.91	3.78	3.77	3.85%

Q: What is your preferred risk-free rate?

A: I prefer the 7-day average yield on the 30-year treasury although it is the second highest interest rate in Table SD-5, because it captures the market's best price of a long-term risk-free rate, for reasons discussed in Appendix G. This is 3.89% currently.[13]

Q: Did you incorporate the long-term forecasted rates in your model?

A: No. Although the resultant ROEs are included in Attachment OUCC-SD-2, the forecasted rates were neither the lowest potential rates nor the highest, so they did not expand the range of results. The interest rates in the long-run being lower than the current 7-day average yield for both the 10 and the 30-year ranges is consistent with Petitioner's witness Nicholas Furia's projection of declining rates; but in essence, the long-term forecasts are for future yields to be broadly equivalent to current yields.[14]

Q: How did you calculate Beta?

A: I used six different sources for Beta: Value Line, Bloomberg, Yahoo! Finance, Zacks, S&P and NYSE. With the exception of the NYSE and Standard and Poors, Ms. Bulkley used these same sources on different inputs (Value Line, Bloomberg, Yahoo! Finance and Zacks for growth and/or Beta estimates). Ms. Bulkley used only Value Line and Bloomberg for Betas. These two sources produce the two highest average values, which are on average 35% higher than the average of the four additional sources and over 20% greater than the mean average of all six sources. Therefore, Ms. Bulkley's decision to use only these two

[13] Currently in this context means the 7 days prior to June 15, 2023, the day I chose to act as a cut-off for collecting information on all factors. This was a good balance between getting close to my testimony date but after the Fed meeting on June 13-14.

[14] Please see testimony of Indiana American witness Mr. Nicholas Furia, pages 9-10. Debt issued in November 2023 will have a projected interest rate of 5.00% for the 10 year and 5.25% for the 30 year maturities, whereas debt issued in May 2024 has projected yields of 4.85% and 5.153% respectively.

sources unreasonably skews her Beta upward. I used the average of all of these sources of Beta for the CAPM calculation, which produces an accurate and reasonable result. All other things being equal, 75 basis points of the difference between the OUCC's and Ms. Bulkley's CAPM results are because of the Beta sources she selected.[15] (7.39%-8.14%)

Table SD-6

Company	Value Line β	Yahoo! β	Zacks β	S&P β	Bloomberg β	NYSE β	Mean Beta
American Water Works	0.90	0.58	0.58	0.63	0.86	0.58	0.69
American States Water Company	0.70	0.41	0.41	0.51	0.66	0.41	0.52
California Water Service Group	0.70	0.47	0.47	0.57	0.69	0.47	0.56
Essential Utilities, Inc.	0.95	0.79	0.79	0.63	0.85	0.78	0.80
Middlesex Water Company	0.75	0.75	0.75	0.63	0.77	0.75	0.73
SJW Group	0.80	0.57	0.57	0.49	0.80	0.57	0.63
Atmos Energy Corporation	0.85	0.62	0.62	0.46	0.76	0.62	0.65
Northwest Natural Gas Company	0.80	0.58	0.59	0.41	0.70	0.59	0.61
ONE Gas, Inc.	0.80	0.67	0.68	0.46	0.79	0.68	0.68
Spire, Inc.	0.80	0.51	0.49	0.47	0.77	0.49	0.59
Mean	0.81	0.60	0.60	0.53	0.77	0.60	0.65
Median	0.80	0.58	0.59	0.50	0.77	0.59	0.64

Q: Please explain the Equity Risk Premium ("ERP").

A: The Equity Risk Premium is the excess return an investor will expect by investing in equities rather than a risk-free investment.[16] In other words, the equity risk premium would be the expected return on "the stock market" (the market rate of return), less the return on a treasury bond (the risk-free rate).

Q: How did Ms. Bulkley calculate the ERP?

A: Ms. Bulkley applied a single phase DCF model to market analyst estimates for certain stocks in the S&P 500 index. Her calculations resulted in an expected annual market return of 12.5%, which significantly exceeds what other sources estimate.

[15] Keeping all of my other inputs the same, and using my preferred inputs, the ROE changes from 7.39% to 8.14%, the Beta changes from .65 (including all 6 sources) to .79 (including just Value Line and Bloomberg).

[16] I treat the equity risk premium and the market risk premium as interchangeable.

Q: Do you agree with this forecast?

A: No. First, Ms. Bulkley states the DCF cannot be fully trusted because utility stocks are overvalued,[17] but then she uses the DCF to calculate a generous Equity Risk Premium ("ERP"), which is a critical input for the CAPM.

Second, this calculation she performs is a single-phase model, which results in problematic results when extrapolated over the long-term. Specifically, if a two-phase model is used where the estimated growth occurs over the next fifteen years, and then nominal GDP is used as the growth function beyond this time, the result is an ROE of 7.92%. The ROE is lower (7.28%) if a growth rate of 8.96% is used to only include the growth rate of the companies being considered in the dividend calculation.[18] Said another way, a 2-stage DCF that incorporates consistent dividend yields and growth estimates would reduce Ms. Bulkley's expected annual market return by 522 basis points. This is in addition to the Beta reduction discussed earlier. Using her Beta numbers, this would reduce her ROE from 10.85% to 6.61% for the mean calculation.[19]

Third, Ms. Bulkley's method mismatches inputs in her dividend and growth estimates. Her analysis doesn't use the entirety of the S&P 500 index, as she eliminated

[17] Ms. Bulkley discusses the expected return of Utility Stocks in section V.D. of her testimony, from pages 20-26. She concludes on page 26, lines 6-9 "The expected underperformance of utilities means that DCF models using recent historical data likely underestimate investor's required return over the period that rates will be in effect."

[18] Nominal GDP sources are from the CBO of 3.7% (Long-Term Economic Projections, Growth of Nominal GDP average of years 2023-2052, located https://www.cbo.gov/data/budget-economic-data#4), and the Federal Reserve Summary of Economic Projections released June 14, 2023, adding the PCE Inflation longer-run estimate of 2.0% and the midpoint of the central tendency of the longer run change in real GDP of 1.85%, found here https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20230614.pdf .) The average of these two numbers is 3.775%, but I rounded up to 4%.

[19] This is simply changing her column F (Market Return) in AEB-4 to 7.28% and leaving all other inputs the same. For this example, I used the Current Risk-Free Rate and Value Line Beta inputs.

103 companies with growth estimates that were either negative or greater than 20% per annum. 337 of the remaining 397 companies are included in her dividend yield calculation of 1.75%, while all 397 are used in her growth estimates. Ms. Bulkley then combines the outputs from these two different groups into a single CAPM calculation. This mixing and matching of different component parts renders the final result unreliable and once again, unreasonably skews her CAPM results upward. For example, the growth estimates for only the 337 dividend paying companies is 8.96%, nearly 170 basis points less than the 10.65% Ms. Bulkley uses in her CAPM.

Fourth, these estimates of long-term market returns are readily available from several reputable, national sources, which invest considerable expertise and effort in creating this forecast. Ms. Bulkley's reliance on her own calculated market return is both less reliable and less transparent for a number of reasons. It is ultimately reliant on only one input (Value Line) for growth estimates. It mixes and matches sources of growth and dividend yields. Further, it projects growth rates in perpetuity that are only meant to cover the next four years (Value Line estimates represent the estimated growth from the average of 2020-2022 to the average of 2026-2028), or a midpoint of 2027, which is four years from today.).

Q: Did you use multiple sources to determine the Equity Risk Premium?

A: Yes. I used multiple sources, some estimated the market return, and some estimated the ERP directly, all of which are described below.

Q: What sources did you use to determine the estimated market return?

A: I used twelve (12) sources that provided information for an expected long-term market return. (See OUCC Attachment SD-2.)

Table SD-7

Source:	Forecast
Blackrock	7.60%
BNY Mellon	6.50%
Damodoran	8.89%
Fidelity	5.50%
Horizon Actuarial Services	6.54%
Indiana American Pension Returns	7.80%
INPRS	7.60%
JP Morgan	7.90%
Richmond Federal Reserve/CFO Survey	8.40%
Schwab	6.10%
Vanguard	5.10%
Verus	6.30%
Average	7.02%

Q: Would any modifications be needed to the above numbers to determine the ERP?

A: Yes. As previously described, to calculate an equity risk premium, one subtracts the risk-free rate from the market return. For instance, if we use a risk-free rate based on the 7-day average yield of the 30-year US Treasury, which was 3.89% as of June 15, 2023, and subtract it from the OUCC's recommended estimated market return from Table SD-7 of 7.02%, this results in an equity risk premium of 3.13% (7.02–3.89). In comparison, substituting Ms. Bulkley's partial S&P 500 12.5% estimated market return would result in an equity risk premium of 8.61% (12.50-3.89), or 2.75 (8.61/3.13=2.75) times greater. Ms. Bulkley's overly inflated estimate of investor required returns (significantly higher than the expected returns of market participants such as Blackrock, Fidelity, INPRS, and even American Water's own pension funds), drives the bulk of the different results between the CAPM estimated in our respective testimonies.

Q: Are there informed sources that project the ERP directly?

A: Yes. For instance, Kroll currently estimates the ERP at 5.50% (as of June 8, 2023). KPMG estimates the MRP at 5.5%, updated March 31, 2023. Professor Aswath Damodoran at the New York University Stern School of Business publishes well known datasets, including updated ERPs, and his update as of June 2023 listed an implied 4.65% ERP (based on adjusted payouts), or 5.25% ERP based on the cash yield of the market. (See OUCC Attachment SD-2 for a summary table. See OUCC Attachment SD-3 for the actual reports.)

Table SD-8

Source	Estimate
KPMG	5.50%
Kroll	5.50%
Damodoran	5.25%
	5.42%

Q: What is your recommended ROE based on the CAPM?

A: My recommended CAPM ROE is 7.39% calculated on the mean and 7.38% calculated on the median of the ROE's for each member of the proxy group. This is based on the 7-day average yield for the 30-year treasury of 3.89%, plus the product of the mean Beta from all six sources of 0.65 for the mean calculation and 0.64 for the median, multiplied by the ERP of 5.42%. As with the DCF model, the mean is a more appropriate result to use and is my preferred result.

Q: Did you also run an ECAPM analysis?

A: I did. I do not find the ECAPM compelling as a model, and the IURC has not explicitly relied on the ECAPM in previous cases to the best of my knowledge. However, I did run the calculations. The ECAPM adjusts the Betas up toward one for low-risk companies such as utilities that have a beta below one. Since some of the Betas utilized above (and all of

them in Ms. Bulkley's CAPM, namely Value Line and Bloomberg) are already adjusted, this results in using twice-adjusted betas in the ECAPM. Therefore, the change I made was to only use unadjusted Betas for this calculation. I accepted Ms. Bulkley's convention of assigning a 25% weight to "the market" as the adjusting factor in the ECAPM. This results in an ROE of 7.59% on a mean basis and 7.54% on a median basis for the ECAPM.

Q: Please summarize your results for the CAPM and ECAPM calculations.

A: For the CAPM, my result is 7.39% ROE. I do not recommend use of the ECAPM, but the result is 7.59% ROE.

D. Summary of ROE Analysis Results and Resulting Recommended ROE

Q: Please summarize the results of the Constant Growth DCF model, 2-stage DCF model, CAPM and ECAPM analyses.

A: Table SD-9 below shows both the range and the recommendation based on six models I calculated. This table also shows the average of all the models; the average, less the two models least relevant and useful; and where applicable, the value for the portion of the proxy group represented by water utilities only.

Table SD-9

Model	Low	Recommendation	High	Water Proxies Only
DCF-Constant Growth-Mean	7.47%	9.00%	9.77%	8.68%
DCF-Constant Growth-Median	8.20%	9.32%	10.13%	9.32%
DCF-2 Stage-Mean		7.61%		
DCF-2 Stage-Median		7.16%		
CAPM	5.56%	7.39%	7.41%	7.44%
ECAPM		7.59%		7.64%
Average:	7.08%	8.01%	9.11%	8.27%
Average (less ECAPM)		8.10%		8.48%
Average (less Median results and ECAPM)		8.00%		

Q: The resulting estimates provided by your models are significantly lower than those of Ms. Bulkley, generally. Why are your resulting estimates and recommended ROE

more reasonable?

A: There are several reasons. First, my assumptions and math are transparent. Second, the results are reasonable because my inputs are reasonable. Third, the COE I propose for Indiana American is reasonably close to the historical spread over the long-term risk-free rate. Finally, the market to book ratio of the proxy group indicates that the required risk adjusted returns for that group is lower than the awarded ROE on a national basis.

Q: How is the differential between the COE for Indiana American and the long-term risk-free rate, in your words, "reasonably close"?

A: On page 19 of her testimony, Ms. Bulkley provides figure 4, which shows the difference in conditions at the time of the last rate case and the present rate case. Set forth below:

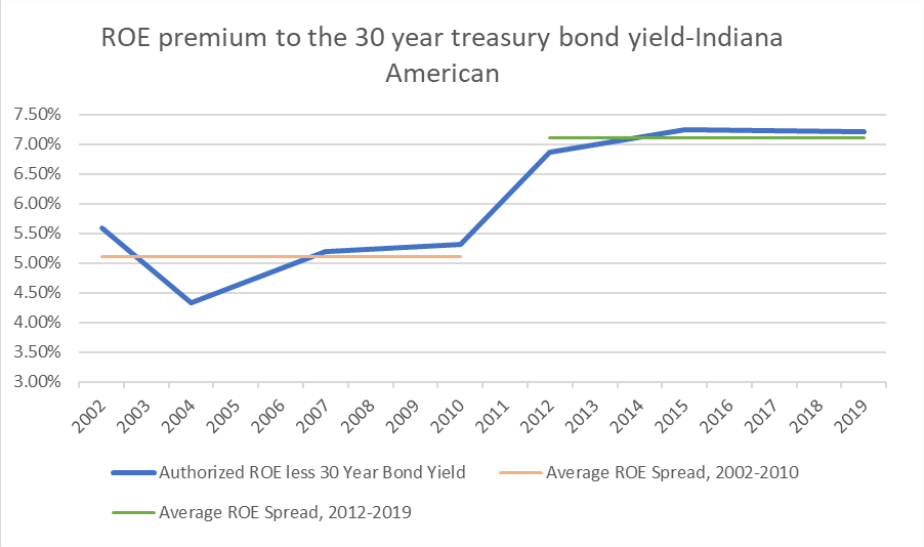
Figure 4: Change in Market Conditions Since Company's Last Rate Case

Docket	Decision Date	Federal Funds Rate	30-Day Average of 30-Year Treasury Bond Yield	Inflation Rate	Authorized ROE
Case No. 45142	06/26/2019	2.38%	2.65%	1.69%	9.80%
Current	01/31/2023	4.33%	3.71%	6.42%	

Ms. Bulkley appears to be arguing that since long term interest rates are up approximately 100 basis points (106 basis points specifically), Petitioner's ROE should also increase by a commensurate, or at least significant, amount. A longer-term view discredits this argument. Over time as long-term interest rates have fallen, the awarded ROE for Indiana American has not been linked tightly with interest rates (nor the inflation rate or the Federal Funds Rate). In fact, the spread between the 30-year Treasury rate and the ROE varied from a low of 4.33% in 2004 to a high of 7.24% in 2015. But there seems to be a bifurcation when looking at these cases. The four rate cases decided from 2002 through 2010 had an average spread of 5.10% (and a total range of 4.33% to 5.58%) and average treasury yields of 4.84%. The three rate cases decided from 2012 through 2019, however, had an average spread of 7.10% (and a range of 6.86%-7.24%) and average treasury yields of 2.65%. In

other words, the linkage between long term treasury rates and the awarded ROE was not strong as interest rates declined after 2010. Therefore, it is not a compelling argument that ROEs should now climb upward in lockstep with long term interest rates. If the ROE spread matched the average from 2002-2010 and based on the current 30-year treasury yield only (3.85% as of June 15, 2023), the ROE would be 8.95%.[20]

Graph SD-1



[20] If, instead, one prefers to utilize longer term averages for the treasury yields (with a set date of June 15, 2023), the 7-Day average is 3.89% (leading to a 8.99% ROE), the 30 day (1 month) average is 3.91% (leading to a 9.01% ROE), the 90-Day (3 Month) average is 3.78% (leading to a 8.88% ROE), and the 180-Day (6 Month) Average is 3.77% (leading to a 8.87% ROE). If we use the long-term forecasted interest rates of 3.85%, this leads to an ROE of 8.95%.

Table SD-10

Docket	Decision Date	Federal Funds Rate	30 Year Treasury Bond Yield (30 Day Average)	Inflation Rate	Authorized ROE	Authorized ROE less 30 Year Bond Yield
42029	11/6/2002	1.34%	4.92%	2.3%	10.50%	5.58%
42520	11/18/2004	1.93%	4.92%	3.6%	9.25%	4.33%
43187	10/10/2007	4.76%	4.81%	3.6%	10.00%	5.19%
43680	4/30/2010	0.20%	4.69%	2.2%	10.00%	5.31%
44022	6/6/2012	0.16%	2.84%	1.7%	9.70%	6.86%
44450	1/28/2015	0.11%	2.51%	-0.2%	9.75%	7.24%
45142	6/26/2019	2.38%	2.59%	1.7%	9.80%	7.21%
45870	n/a (data on 6/15/23)	5.08%	3.91%	4.1%		

Q: Please elaborate on your statement that the market to book ratio of the proxy group would indicate that the required risk adjusted returns for these companies is lower than what is being awarded nationally regarding the return on equity component.

A: The basic theory behind an ROE in a regulatory framework is that an investor may invest his or her money in a multitude of potential investments, and the return on a utility investment should equal what he or she could get from an alternative investment of similar risk. A result of this is once that investment is made, the value of the investment is still $1.00, meaning a dollar of equity is earning an appropriate risk adjusted return. This is what the market to book ratio measures. This is the market price compared to the book value of a company. Generally, we make the simplifying assumption that the book value of a utility stock is approximately equal to the equity component of its capital structure , so the market to book ratio should be generally measuring the market price of a dollar of equity. The current market to book price of the proxy group I selected is 2.301.[21] The water utilities in my proxy group have an average of 2.88.[22] This means the market values a dollar

[21] Based on S&P reports on June 1, 2023. These numbers may be found on Attachment SD-2, tab "S&P Data" and consists of the price/book ratio average of my proxy group.

[22] American Water Works ratio is 3.02.

of equity investment in rate base at $2.88 for the "average" water utility.[23] This strongly implies that the risk-adjusted returns being enjoyed by the average water utility are currently higher than necessary to compensate the investor for the risk they are incurring.

Q: What is your recommendation for the authorized return on equity for Indiana American?

A: 9.00%. This is the result of my DCF-Constant Growth model, based on the mean for each individual company.

Q: Why is your recommendation significantly above the average results of your models?

A: The average result of my models for my preferred inputs is 8.01%. Removing the ECAPM, which is the weakest of the models as well as the median 2-Stage result (which is duplicative of the Mean results) provides an average of 8.00%. The average of the four models that provide ROEs for the water proxies only (Table SD-9) is 8.27%, and for the water utilities only, the Constant Growth DCF models (median and mean results) average is 9.00%. The 2-stage DCF is theoretically sound and has significant advantages over the Constant Growth DCF. While the CAPM has value, the DCF inputs are more reliant on readily available information that is transparent and where there are disagreements, they are not as significant (e.g., the future growth estimates tend to be in a tighter range than the future equity risk premium over the long run).

Taken together, these issues influenced my decision to recommend a return on the higher end of my range. 9.00% is based on a specific model, which gives this estimate more robustness than a number not based on a tangible average or result.

[23] I acknowledge there may be subtleties in the holding company structure that results in discrepancies in the representation of the book value as equal to the rate base assumption, but those discrepancies should not be of the scale we are discussing here.

IV. CAPITAL STRUCTURE AND IMPACT ON AFFORDABILITY

Q: What Capital Structure does Petitioner propose in the current cause?

A: Petitioner proposes a capital structure of 56.15% equity and 43.85% debt as of April 30, 2025.[24] For purposes of this section, I am not including other zero-cost items in the capital structure.[25]

Q: Do you disagree with Indiana American's proposed capital structure?

A: No. But it is important to note how its capital structure has changed over time to a higher percentage of equity, making it more expensive for its ratepayers. For purposes of my discussion in this section of my testimony, I consider the effects based upon Indiana American's requested cost of equity, rather than the OUCC's recommended cost of equity; and I likewise use Indiana American's Weighted Cost of Capital ("WACC") as proposed.

Q: What is the importance of the capital structure?

A: Fundamentally, the Capital Structure is one of three numbers impacting the Weighted Average Cost of Capital, which determines the return on Rate Base. The Capital Structure is something that a utility has discretion over, determined by decisions the utility makes regarding how to fund its capital costs. Generally, in a competitive market, management will attempt to find an optimal capital structure that would result in the lowest weighted average cost of capital, or WACC. By optimal, I simply mean the best combination of debt and equity that, combined, provides the lowest long-term total cost of funding. This allows

[24] Per Petitioner Workpaper CC-1, tab Rate of Return, Step 3 Information which begins on line 16. Long-Term Debt of $651,443,865 and Total Common Equity of $834,238,915. Total of these two numbers is $1,485,682,780. $651,443,865/1,485,682,780=.4385 and $834,238,915/1,485,682,780=.5615.

[25] Ms. Bulkley's testimony takes the same general approach in terms of addressing the proposed capital structure in terms of debt and equity only. Please see Ms. Bulkley's testimony, page 50, lines 17-21.

a company to fund its operations as inexpensively as possible. Utilities operate in a regulated environment, and the pressures upon management are different. Ratepayers would benefit by having an optimal capital structure (since rates would be lower) but gross profitability declines as more debt is included in the capital structure.[26] This is because in a regulated environment, profits come from the return on equity, since O&M costs are recovered in rates at cost. Debt always costs less than equity on the margin, due to debt being "higher" in the capital structure than equity (meaning debt has the first claim on the cash flows and first claim on the assets).

Q: What is the cost difference between debt and equity in Indiana American's capital structure?

A: Indiana American is requesting a 10.6% COE and is claiming a cost of debt of 4.71%.[27] This results in its estimated WACC of 6.88%.[28] From this simple reading it looks like equity costs are approximately 125% more than debt.

However, this doesn't capture the full picture. Because there are taxes on the cash flows resulting from the cost of equity, the actual cost difference is even greater.[29] If Indiana American is at a 25% tax rate overall, this would be an after-tax cost of equity of 14.13%, or three times the cost of debt.

Q: Has Indiana American's Capital Structure changed over time?

A: Yes. In Petitioner's last financing case (Cause No. 45660, order dated May 18, 2022), I

[26] Assuming the overall capital requirements stay the same. In this context I am referring to the percentage changes in the capital structure, not simply adding equity or debt to an already existing structure.

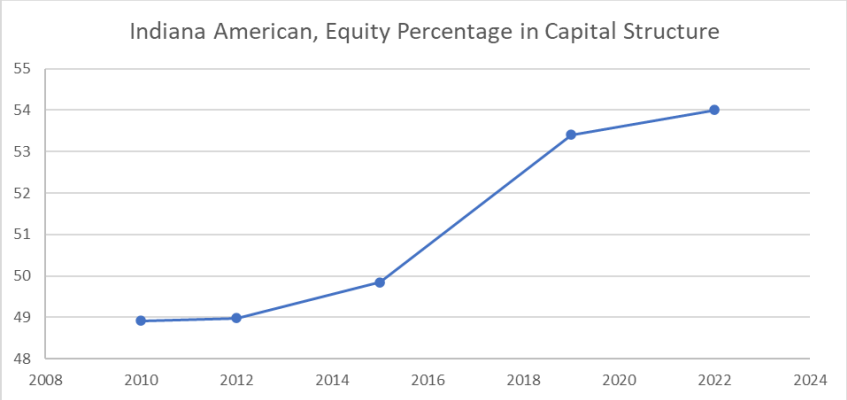
[27] Cost of Debt is from schedule CC-1, and is specifically the cost in step 3, it is slightly different in the other phases (i.e., 4.73% in step 1 and as of 9/30/22, and 4.71% in step 2 and step 3 of this case).

[28] As above, this is the WACC at the end of Step 3, it is 6.28% as of 9/30/22, 6.77% at the end Step 1, and 6.75% at the end of Step 2. This is also including portions of zero cost capital in all phases.

[29] Debt enjoys a tax shield (meaning taxes are not paid on interest payments).

expressed concerns about the continued increase in the percentage of high-cost equity in the capital structure. As part of this discussion, I included the following graph (SD-2), showing the change in capital structure over the course of four recent orders and that cause.

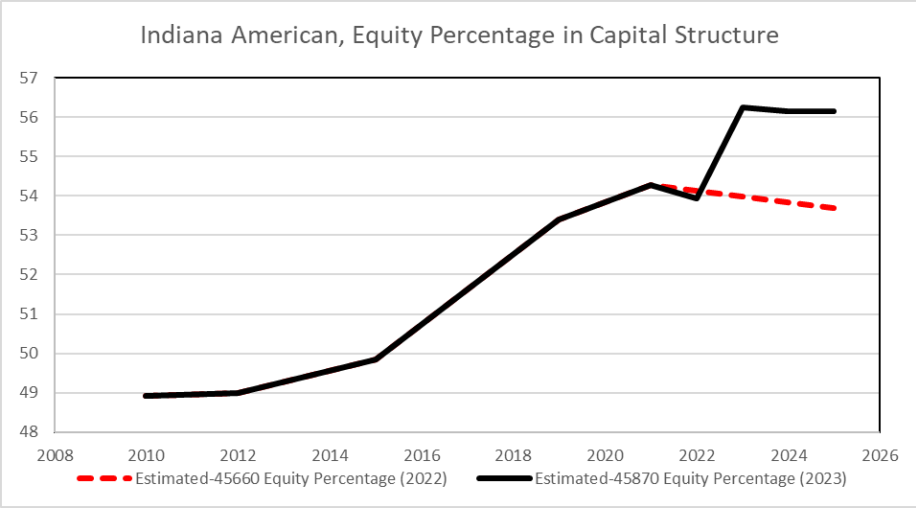
Graph SD-2



Q: Has Indiana American's capital structure continued to become more weighted toward equity since this recent financing case?

A: Yes. In Cause No. 45660, Indiana American provided an estimate of where it expected the capital structure to be in 2025 (53.69% equity). In a case filed less than one year after this order, Indiana American now projects that the capital structure in 2025 will be 56.15% equity. The below graph shows the previous estimate as a red dashed line, and the current estimate (and actuals for previous years) as the black line.

Graph SD-3



Q: Does this affect rates?

A: Yes. The utility determines the capital structure, which directly affects the rates charged and the profits for the shareholders. Substituting higher-cost equity for lower-cost debt benefits shareholders while causing customers to pay higher rates. Conversely, the capital structure does not establish how quickly plant should be replaced, whether safety initiatives should be implemented, or what operational improvements should be made.

Q: Quantify the impact on rates of the recent changes in the capital structure.

A: The capital structure from 2012 was 48.98% equity and 51.02% debt. If this same capital structure was in place today, and all else was equal (cost of debt, requested cost of equity, etc.), Petitioner's proposed annual revenue requirement at the end of Step 3 would be approximately $6.2 million lower at the end of Step 3.[30]

V. FLOTATION COSTS

Q: Did Petitioner present flotation costs in this cause?

[30] Please see OUCC Attachment SD-4 for details on this calculation.

A: Yes. However, Petitioner has not requested recovery of a specific amount but instead has requested flotation costs be considered in the determination of cost of equity.

Q: Please explain how the Petitioner determined the incurred flotation costs.

A: Petitioner's parent company American Water Works issued stock in March 2023.[31] This was an equity issuance of approximately $1.7 billion. Total flotation costs at the Parent Company level were estimated at $26.4 million, or 1.54%.[32] Most of this was due to underwriters' discounts.

Q: How did Ms. Bulkley account for this cost?

A: She reflected it within a DCF model estimating the ROE. This was not the same DCF model she used in computing the ROE, in which she determined the range of outcomes of her DCF models.

Q: Is this a reasonable way to account for this cost?

A: No. This cost should not be applied to all outstanding equity.

Q: Please explain why this cost should not apply to all outstanding equity.

A: Most of the equity of a mature company like Indiana American would typically be generated or represented by retained earnings (from profits), and not through regular stock offerings. American Water (the parent company) states in investor releases that it targets a dividend payout ratio (the percentage of profits paid out as dividends) of 55-60%.[33] This means the target for the company is the remaining 40-45% of all profits are retained in the company and become retained earnings. There are no costs of issuance for retained

[31] The stock was issued in February but didn't close until March. Since the exact dates are not important in this context, I will use the shorthand of saying it was issued in March.

[32] Please see Ms. Bulkley's attachment AEB-7.

[33] June 2023 Investor Presentation. Page 22. Please see this page as OUCC Attachment SD-5.

earnings.

Q: Does a portion of the equity of Indiana American consist of retained earnings?

A: Yes. However, it is difficult to determine a precise percentage because Indiana American is a subsidiary and not a stand-alone company; the retained earnings balance does not change from year to year. The retained earnings balance does not accurately reflect the full amount of retained earnings from profit that comprise Indiana American's equity balance. Based on discovery responses, the total amount of equity issued by American Water Works over the previous 23 years, consisting of three issuances of $241,621,250 in 2009, $183,586,200 in 2018 and $1,687,688,626 in 2023, amounts to 8.2% of the total Market Cap listed in the May 30, 2023 Value Line Report ($25.8 billion).[34]

Q: Should the flotation costs apply only to issued equity?

A: Yes. Retained earnings do not incur this cost.

Q: What did Ms. Bulkley include for flotation costs?

A: Ms. Bulkley included four additional basis points in her ROE based on a DCF model. This was not reflected in the DCF model she used directly to determine the cost of equity, nor did it adjust the range of outcomes of her DCF models for determining the ROE. This did not directly result in an increase in her recommended ROE, but it was stated in discovery that she "considered this cost in identifying an ROE from within the range of estimates from the various models."[35]

Q: If you applied the flotation costs only to the 8.2% of issued equity, what would this adjustment be?

[34] Please see response to Data Request DR-13-3, found in OUCC Attachment SD-6.

[35] Please see response to Data Request DR-13-9, Found in OUCC Attachment SD-7.

A: This would result in an adjustment of approximately 0.3 Basis Points (8.19% of 4 basis points). This would represent an additional .003% if applied to the ROE.[36]

Q: Are flotation costs cash payments made by Indiana American?

A: No. First, Indiana American has not issued equity, incurred any cost from that equity, or received any proceeds directly from the issuance of that equity. The parent company American Water Works is the entity that issues stock. Most (approximately 97.5%) of the costs incurred are underwriter discounts. This is a method of paying the underwriter by discounting the equity to the underwriter rather than incurring a cash cost. The remaining costs (approximately $675,000) are true out of pocket payments.

Q: Does the market already account for flotation costs?

A: Yes. The investors are well aware of underwriters' fees. Investors know a portion of the amount they are paying for the shares does not go directly to the company.[37] Since it is a well-known fact, investors adjust the stock's market price to account for this knowledge. The market price of the stock impacts other calculations, for instance the dividend yield would rise if the market price fell. This directly impacts the dividend yield used to calculate the DCF (and thus, increases the resulting ROE).[38]

Q: Should flotation costs be awarded in this case?

A: No. For the reasons discussed above, flotation costs should not be reflected in a higher cost of equity.

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[36] S&P states the market to book ratio for American Water Works is 3.02. If we assume this flotation cost should apply to the book value, this still is an adder of only approximately 1 basis point to ROE.

[37] It is, in fact, a federal requirement this information to be shared on the first page of a prospectus, see Regulation S-K, 17 C.F.R. §229.501(b)(3).

[38] If the market price falls by 1% and dividends stay the same (there would be no reason for dividends to change based on an equity issuance), the yield will increase by 1% (for example, from 2% to 2.02%).

VI. DECLINING USE ADJUSTMENT (RESIDENTIAL)

Q: Did Indiana American propose a declining use adjustment for residential consumption in this case?

A: Yes. Mr. Rea provided testimony projecting a reduction in revenues based on declining use of water by the residential class.

Q: Please explain what a declining usage adjustment is.

A: A declining use refers to an estimated volumetric decrease in water use, which is typically based on a trend calculated over some past period using actual usage data. Mr. Rea provided ten years from 2013-2022 of actual data in his analysis. Advances in water saving technology, such as low-flow toilets and showers, are considered a primary driver of this enhanced efficiency. This trend should, over time, reduce the need for larger water and wastewater treatment plants, allow for lower storage and pumping requirements, and generally provide many savings and benefits to society at large.

Q: Does American Water Works project that per customer usage will continue to decline over the medium term?

A: Yes. American Water Works' investment literature states it is targeting a 15% reduction in water usage from 2015-2035 and has already achieved a 5% reduction as of 2020. (OUCC Attachment SD-8)

Q: How will Indiana American participate in these reductions?

A: In response to discovery, Petitioner explained that Indiana American will support this goal and will design programs to achieve a target decline of approximately 15%, although the more detailed target goals are apparently not yet developed for Indiana American and will

be developed over the next few years.[39] (OUCC Attachment SD-8) In the attachment referenced in this discovery response (the water efficiency one-pager), it is stated that the reduction from 2015 through 2020 was 5%.[40] On an annual basis, this represents a target of 0.67% annual decline from 2021 through 2035.[41] The average decline over the period of 2015 through 2020 has been approximately 1.0% a year, and going forward it is expected to decline by a lower 0.67% per year.[42]

Q: Is Petitioner's declining use adjustment consistent with this target from the parent company of approximately 0.67% per year?

A: No. Mr. Rea proposes a declining use adjustment based on a decline of 585 gallons per year per customer.[43] He states that since 2013, the average decline has been approximately 2.0% in residential consumption per customer per year.[44] In the workpapers for Attachment CBR-5, he forecasted a declining use of 3.06% in 2023, 1.25% in 2024 and 1.27% in 2025 based on his forecasts. However, based on actual usage, his decline from 2022-2023 is

[39] It is noteworthy that this has been an emphasis for 8 years at the corporate level, and Indiana American has still not developed a specific plan to engage in this endeavor or provide more detailed possibilities and estimates for the preparation of these ESG documents.

[40] I include this one-pager in OUCC Attachment SD-8 with the Discovery response. I am not including the other linked document, both because it is significantly longer and because it doesn't appear to have significant water use data.

[41] 5% achieved from 2015-2020, and 15% target from 2015-2035, meaning an additional 10% reduction over the years 2021-2035, or 10%/15 years=0.67%.

[42] Broadly, this pattern is consistent with the declining usage adjustment presented in Indiana American's previous cases. In Cause 44450 (filed 2014), the proposal was for a declining use of 1,536 per year (2.94%) and in Cause 45142 (filed 2018), Indiana American requested a declining use adjustment of 1050 gallons per year (2.4%). The source for both these numbers is Mr. Kaufman's testimony in Cause 45142, filed December 26, 2018, page 32. In the current cause the proposed adjustment is 585 gallons per year (although the actual amount being requested is materially different, 585 gallons/ 48,775 actual use in the base period is 1.12%).

[43] Please see Mr. Rea, direct page 68, lines 15-16.

[44] Please see Mr. Rea, direct page 69, lines 1-3. "Consumption patterns for the Company's customers are similar to those for other American Water operating companies which have experienced a decline in residential consumption per customer averaging approximately -2.0% per year over the last 10 years."

3.87%.[45] The requested declining use is not detailed as a percentage in the accounting schedules but is instead presented as a volume-based input to forecast revenues. More specifically, usage is presented as 4,065 gallons per month per customer in the base period from October 1, 2021 through September 30, 2022,[46] 3,901 gallons per month in calendar year 2023, and 3,836 gallons in the period from May 1, 2024 through April 31, 2025. Petitioner is not requesting a percentage reduction from the actual usage but proposes to use the output from the regression analysis as the estimate of future usage.

The output of the regression analysis results in a much steeper decline for the period between the base period and calendar year 2023. Mr. Rea did not produce a "trendline"; rather, he produced a future monthly projection of estimated flows based on estimated precipitation, estimated cooling degree days, monthly adjustments and his estimated 585-gallon annual decline. His 2023 forecast based on these estimates is significantly lower than the actual 2022 volumes, as well as the base period ending September 2022.

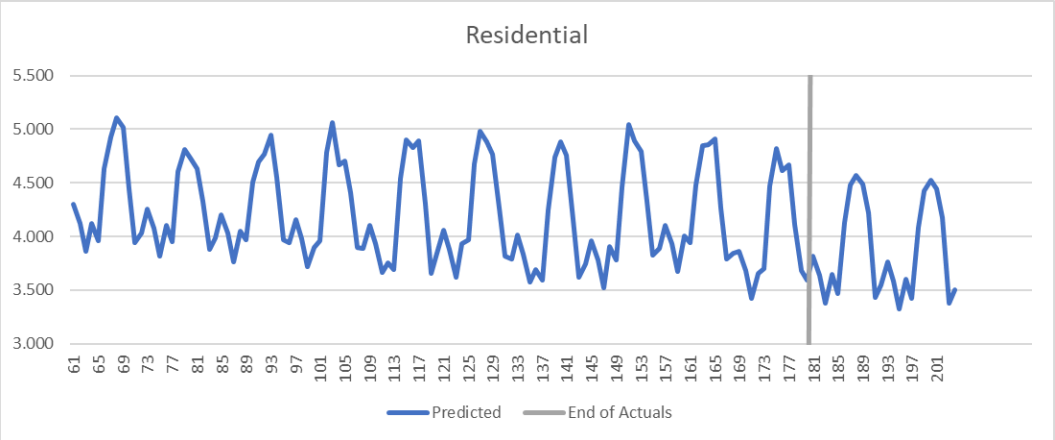
Q: What does Mr. Rea's model predict?

A: Graph SD-4 shows Mr. Rea's forecast results. This graph is a modification of the graph that appears in attachment CBR-5 workpaper, on the residential tab. The projected usage Indiana American incorporated into its revenue determinations results from these numbers.

[45] Cells AD39-AG46 in the Excel spreadsheet, workpaper CRB-5, tab Total INAW. Specifically, a decline of actual usage in 2022 of 48.702 (thousand gallons, annual usage), and 46.816 predicted usage in 2023. 46.816/48.702-1=-.0387)

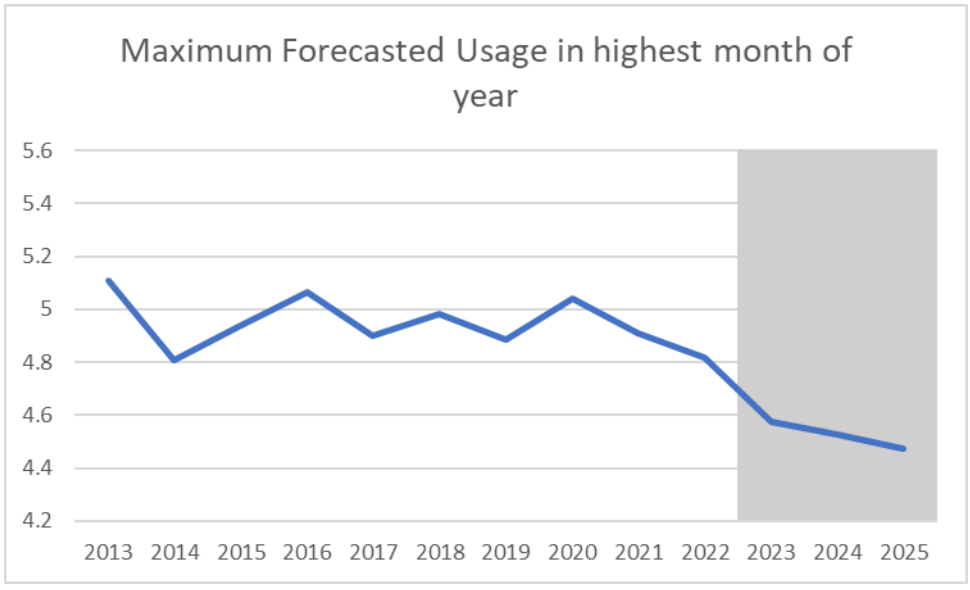
[46] This actual usage may be verified in Mr. Rea's attachment CBR-5 workpaper, residential tab, cells G110-G121. For calendar year 2023, the relevant cells are G125-G136, and the average is 3.906. For the period May 2024-April 2025, the relevant cells are G141-G152 and the average is 3.84.

Graph SD-4



The maximum usage (e.g., the highest monthly usage in a given year per the forecast), results in the graph below (Graph SD-5). This indicates that the forecasted period had drastically lower maximum use months than in the past. The greyed area represents the years in which there are no actuals to support the model and the outputs of the model are based on forecasted or estimated inputs only.

Graph SD-5



Simply put, the average top usage month from 2013 through 2022 is 4,946 gallons per

customer. The average for the forecasted period is 4,525. Declining use is a real phenomenon, but the means to capture this decline is via an annual trendline applied to actual usage, and not a monthly model with significant and unnecessary complexity.

Q: Did you conduct your own analysis based on actual usage?

A: Yes. My result was an annualized decline of approximately 0.89%.[47]

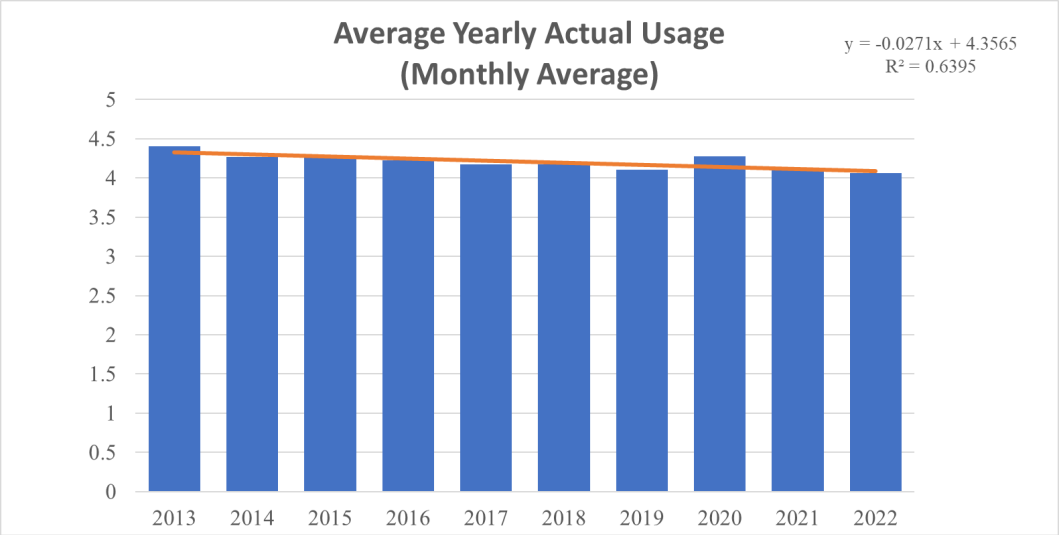
Q: How did you estimate the appropriate declining use adjustment?

A: First, I completed this analysis simply by looking at actual usage over the past decade on an annualized basis and running a regression on these totals. The results are fundamentally the same regardless of whether the inputs are annualized or monthly.[48] The source of the actual usage data is Petitioner's Workpaper CBR-5. Two different presentations of the actual usage over the last decade (the only difference being presenting the data as monthly or as annual) are shown in the following graphs.

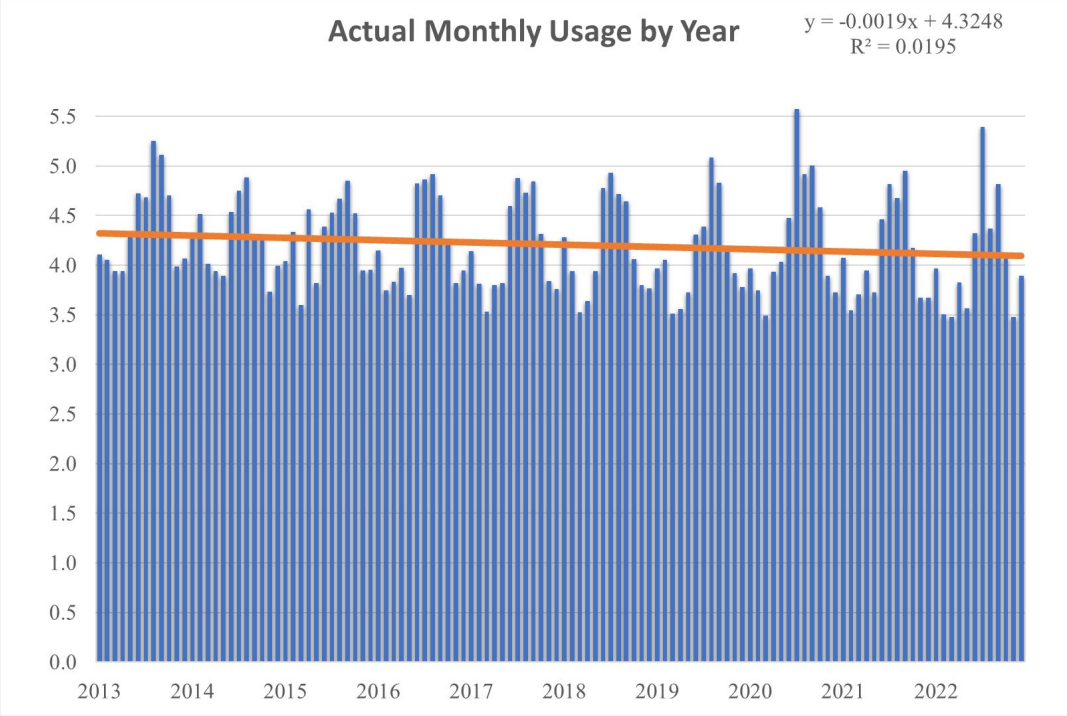
[47] The regression model provides annual consumption changes in gallons, not in percentages. My change in gallons is -436 gallons per year. Applying this to base period actual usage of 48,775 gallons per residential customer per year provides an annual percentage decline of 0.894%.

[48] The monthly numbers provide a very poor "fit" or R squared value. In this context I am not referring to the tightness of the trendline, but the slope of the line generally.

Graph SD-6



Graph SD-7



Q: Did you use annual or monthly inputs for your model?

A: I used annual inputs, which is more appropriate to determine a long-term decline of usage.

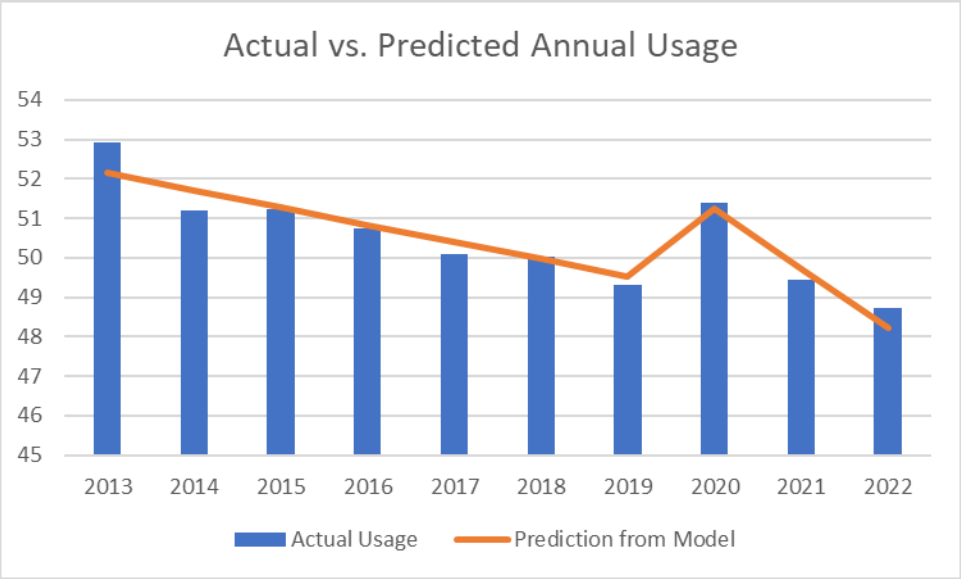
As a first step to determine annual consumption, I aggregated the monthly totals of usage.

Q: Did you make any adjustment to the declining use forecast beyond the regression on the monthly and annualized usage?

A: Yes. I included a Covid adjustment. Mr. Rea's inclusion of a Covid adjustment is a reasonable attempt to capture the impact of the recent pandemic and the societal behavioral changes that affected residential water use. Although there was a clear starting point to the restrictions associated with the pandemic, there is not a clearending date. Mr. Rea simply used a full Covid adjustment from April 2020 through December 2021, which I accept as an end date. However, I applied a Covid adjustment of 0.5 for 2021. Since vaccines were widely introduced in early 2021, the effect of the pandemic lessened throughout 2021, and I concluded the social and economic effect of the pandemic (time spent at home and hygiene patterns that would affect residential water usage) lessened significantly throughout the year and was generally less in 2021 than it was in 2020. The results of using a "half" Covid adjustment in 2021 improved the output of the model.[49]

[49] Using a 0.5 Covid Adjustment for 2020 (as opposed to a 1.0 Covid Adjustment) increased the adjusted R square value from 0.78 to 0.88 and it increased the T-stat from it increased the R squared value from .829 to .875, and the T-stat from 2.8 to 4.4.

Graph SD-8



Q: Please explain why you did not include weather adjustments in your declining use forecast of.

A: I acknowledge weather affects water usage. People water their lawns and will use more water in hot periods. However, this effect is much more pronounced on a monthly basis, which is what Mr. Rea modeled and forecasted. Determining monthly usage is obviously critical for operating a water utility for many reasons. However, to determine declining use through April 2025, the monthly volatility and variability is simply not important. What is important is the underlying trend of lower use on an annualized basis. All numbers we are concerned with (the base period, the linking period, and the test year) are 12-month "blocks," so all monthly variation cancels out, and the relevant number is the annualized usage (presented as a monthly average). As a double check, I did input both cooling degree days and precipitation on an annualized basis into my model, both by themselves (along with the annualized usage and Covid Adjustment) and together. These inputs did not have

a t-Stat Value or P-value that would indicate statistical relevance.[50]

Q: Does your proposed model have a similar R squared value to that of Mr. Rea's model?

A: Yes. Mr. Rea's model has an Adjusted R squared value of 84.7%. My model has an Adjusted R squared value of 87.5%.[51] My model provides a slightly higher adjusted R squared value. It is important to emphasize that complexity does not necessarily increase accuracy, and fundamentally the complexity of Mr. Rea's model does not advance the goal of determining annual usage declines. Mr. Rea expended significant effort to create a model that would fit monthly forecasts to actual results. This close fit results in a high adjusted R squared value. Weather impacts would still exist, as the weather would potentially be different from year to year, with droughts and heat waves for example. However, there is no reason weather patterns in the test year will fundamentally differ from the average weather of the past ten years. The noise of monthly projections distracts from the purpose of a declining use adjustment. For a declining usage adjustment, there is no need to fit monthly forecasts into actual results. For instance, it does not matter to the underlying trend if August sales are higher than January sales. The purpose is to forecast annual usage over the next two and a half years (or through the end of test year in April 2025).

Q: What is the declining use adjustment incorporated into the OUCC accounting schedules?

[50] Mr. Rea states that a t-Stat value of under +/- 2.00 is not relevant, the values for the precipitation only was -1.32, for cooling degree days it was -.0113, and for both combined it was .32 and -1.26. It is not surprising this was significant in Mr. Rea's modeling, since on a monthly basis, these factors clearly have relevance.

[51] The R squared value (or adjusted R squared when using multiple inputs as both Mr. Rea and I do in our respective models) is a measure of the "fit of the model". Strictly speaking it is the coefficient of determination. It basically is a measure of how well the regression line, or "the model" approximates the actual data. Mr. Rea's R-Squared may be found on Attachment CBR-5, cell B12.

A: I modeled the decline of 436 gallons per year moving forward (which is approximately 0.89% annually) and used the actual usage from the base period (the twelve months ending September 30, 2022) as my starting point.[52] (See OUCC Attachment SD-9.) Fundamentally, I propose to take the actual usage in the base period and reduce this usage by 436 gallons per year to arrive at the estimated usage in the subsequent periods. My recommendation specifically is for a projected monthly usage of 4,019 gallons per month per residential customer in the linking year of calendar year 2023 and 3,971 gallons per month per residential customer in the test year of May 1, 2024 through April 30, 2025. Petitioner proposes to use the numbers predicted by its model in future periods, which fundamentally means the actual usage in the base period does not matter significantly.[53]

Q: You provided two means of estimating the forecasted use, the numbers provided by American Water to the investment community and an analysis of the actual usage. Are these measuring the same customers?

A: No. The information provided to the investment community includes all customers, and the analysis I performed (as done in Mr. Rea's analysis) only focused on residential customers. If either the unsupported 2% number provided by Mr. Rea or the approximately 1.20% decline he forecasts are correct, usage by other categories of customers would have to either be increasing or very close to flat, on average.

[52] There is actual usage through December 2022 in workpaper CBR-5 "residential" tab, but since the base period is what is used for the setting of charges and costs, I did not consider it consistent to use a different time period for the actual usage. The .89% is calculated as 436 gallons/48,775 gallons per year (which is the average usage of 4,065*12=48,775).

[53] Actual usage in the base period does affect the forecast, since it is 10% of the inputs (one year out of 10), but this affect is relatively muted.

VII. RECOMMENDATIONS

Q: Please summarize your recommendations.

A: I recommend the Commission authorize a return on equity of 9.0%, based on my analysis. Also based on my analysis, I recommend the Commission accept a declining use adjustment for residential customers of approximately 0.89%. This results in monthly usage of 4,019 gallons per month per residential customer in the linking year of calendar 2023, and 3,971 gallons per month in the test year.

Q: Does this complete your testimony?

A: Yes.

Appendix A

Q: Please describe your educational background.

A: I graduated from Indiana University with a degree in Biology, a minor in Economics and a certificate from the Liberal Arts and Management Program (LAMP) which is an honors certificate program through the Kelley School of Business and the College of Arts and Sciences. I received my MBA from Indiana University with a concentration in finance. I am a member of Phi Beta Kappa honor society for my undergraduate studies and Beta Gamma Sigma honor society for my master's program. I have a certificate from Stanford University for the Energy Innovation and Emerging Technologies Program. I am a certified rate of a return analyst (CRRA designation) from the Society of Utility Regulatory Financial Analysts. Although not specifically related to my educational background, I am a member of Mensa.

Q: Please describe your work experience.

A: Upon graduating college, I moved to New York and worked at Grant's Interest Rate Observer, which is a financial newsletter and Lebenthal and Co., which was a municipal bond brokerage. I moved back to Indianapolis and worked at RCI Sales in Indianapolis, which was a manufacturer's representative/distributor in commercial and institutional construction, ultimately becoming the owner and leaving when I sold the company and merged it into a competitor. I then worked at Amazon as a financial analyst in its fulfillment division.

Q: How long have you been at the OUCC?

A: I started at the OUCC in the Water/Wastewater Division in December 2019 as a Utility Analyst II and was promoted to a Senior Utility Analyst in May 2022. My focus is financial

issues, such as ROEs, Capital Structures, Debt Issuances, Cost of Debt, etc.

Q: Have you previously testified before the Indiana Utility Regulatory Commission?

A: Yes, I have testified before the Commission regarding various aspects of finance in multiple cases.

Appendix B

SD-1 Value Line list of Water Utilities

SD-2 Spreadsheet with DCF and CAPM models, and Inputs

SD-3 ERP Forecasts

SD-4 ROE Spread and Capital Structure Spreadsheet

SD-5 June 2023-Investor Presentation-Dividend Payments

SD-6 DR-13-3 (Total Equity Issuances)

SD-7 DR-13-9 (Flotation Cost Recovery)

SD-8 DR-20-12-Declining Use and Water Efficiency One Pager

SD-9 Declining Use Spreadsheet

SD-10 DR-1-17 and DR-1-18 (Pension Returns)

APPENDIX C

Discounted Cash Flow ("DCF") Analysis

A. Introduction to DCF Model

Q: Please describe the Discounted Cash Flow Model.

A: The DCF model is typically used by investors to determine the appropriate price to pay for a security. This model assumes that the price of a security should be determined by its expected cash flows, discounted by the company's cost of equity. On a one-year horizon, the price of a stock (P_0) is equal to the anticipated dividends paid during the year (D_1) plus the anticipated price of the stock at the end of the year (P_1) divided by one plus the company's cost of equity (k). The year-end price (P_1) is determined by adding next year's anticipated dividends (D_2) and next year's anticipated year-end price (P_2) divided by one plus the company's cost of equity (k).

$$P_0 = \frac{(D_1 + P_1)}{(1 + k)} \quad \text{and} \quad P_1 = \frac{(D_2 + P_2)}{(1 + k)}$$

Because investors may plan to hold securities for many periods, the DCF equation can be restated for an infinite or unknown number of periods as follows:

$$P_0 = D_1/(k-g)$$

(Where the price of a security (P_0) equals the anticipated dividends paid over the

current period (D_1) divided by the company's cost of equity (k) minus the expected growth rate of dividends (g)). The company's cost of equity must be greater than its expected dividend growth rate for this model to be valid. By rearranging the above formula, the DCF formula regularly used in regulatory proceedings can be derived as follows:

$$k = (D_1/P_0) + g$$

This formula reflects the cost of equity (k) equals the forward dividend yield (D_1/P_0) plus the expected growth rate in dividends per share (g). To estimate the cost of equity (k), the forward yield (D_1/P_0) and the expected growth rate in dividends (g) must be estimated).

B. Dividend Yield

Q: How did you calculate the forward yields (D_1/P_0)?

A: To calculate a forward yield (D_1/P_0), the current yield (D_0/P_0) must be calculated first. A company's current yield equals its current annual dividends (D_0) divided by its current stock price (P_0). The current annual dividend is calculated by multiplying the company's most recent quarterly dividend by four. In this analysis, I sourced annual dividend information from Yahoo! Finance and have used stock prices on the spot market (on June 15, 2023 in this case), and the previous seven days to the spot price (June 9 through June 15, 2023), the previous month, the previous three months and the previous six months.

Q: How do you convert current yields (Do/Po) into forward yields (D_1/Po)?

A: The following equation is used to convert a current yield to a forward yield: (D_1/P_0) = (D_0/P_0) * (1 + .5g). For example, if Company X had a current dividend yield of 4.0% and

an expected growth rate of 6.0%, the formula multiplies the 4.0% current dividend yield by 1 plus 3.0% or 1.03, (3.0% is one half of the 6.0% expected growth rate). This results in a forward dividend yield of 4.12% or an increase of 12 basis points over the current dividend yield. This is the method I used. Ms. Bulkley also uses the one-half year's growth methodology.

Q: Has the Commission supported the use of the one-half-year's growth methodology to convert current yields to forward yields?

A: Yes. Although there is no universally accepted methodology, the one-half-year growth methodology to convert current yields to forward yields has been regularly accepted by this Commission.

> We are well aware of the advantages and limitations of the various approaches used by each of the witnesses. For example, the half- year method used by the OUCC for calculating the forward dividend yield is the most frequently used approach in this jurisdiction, and it is rarely a point of contention in DCF analysis. We believe that it fairly represents the dividend payments expected and received by investors, while the full year method employed by Petitioner overstates the dividend yield.

(Cause No. 40103, Indiana American Water Company, Inc., May 30, 1996, final order at 40.)

I do not expect the calculation of the forward dividend yield in this cause to be controversial. The inputs and calculation will likely change as more current data becomes available, but the methodology is generally accepted by the parties.

Q: **What dividend yields do you use in your DCF analyses?**

A: The specific dividend yields may be found in OUCC Attachment SD-2, on tab

"Constant Growth DCF". Below please find a portion of this tab with the relevant information.

Table SD-11

Company	Ticker	Annualized Dividend	Dividend Yield-Spot	Expected Dividend Yield-Spot	Dividend Yield-1 Week	**Expected Dividend Yield-1 Week**	Dividend Yield-1 Month	Expected Dividend Yield-1 Month	Dividend Yield-3 Months	Expected Dividend Yield-3 Months	Dividend Yield-6 Months	Expected Dividend Yield-6 Months
American Water Works	AWK	$2.83	1.91%	1.98%	1.93%	**2.00%**	1.96%	2.03%	1.94%	2.01%	1.91%	1.98%
American States Water Company	AWR	$1.59	1.81%	1.88%	1.81%	**1.88%**	1.78%	1.85%	1.78%	1.85%	1.75%	1.81%
California Water Service Group	CWT	$1.04	1.99%	2.06%	1.94%	**2.01%**	1.87%	1.93%	1.83%	1.89%	1.78%	1.84%
Essential Utilities, Inc.	WTRG	$1.15	2.76%	2.85%	2.77%	**2.86%**	2.81%	2.90%	2.72%	2.81%	2.61%	2.69%
Middlesex Water Company	MSEX	$1.25	1.52%	1.56%	1.52%	**1.56%**	1.57%	1.60%	1.61%	1.65%	1.57%	1.60%
SJW Group	SJW	$1.52	2.09%	2.16%	2.09%	**2.15%**	2.03%	2.09%	1.99%	2.05%	1.97%	2.03%
Atmos Energy Corporation	ATO	$2.96	2.52%	2.62%	2.52%	**2.62%**	2.55%	2.65%	2.58%	2.68%	2.58%	2.68%
Northwest Natural Gas Company	NWN	$1.94	4.56%	4.65%	4.50%	**4.58%**	4.44%	4.53%	4.22%	4.30%	4.11%	4.19%
ONE Gas, Inc.	OGS	$2.60	3.34%	3.44%	3.25%	**3.35%**	3.23%	3.32%	3.25%	3.35%	3.27%	3.37%
Spire, Inc.	SR	$2.88	4.52%	4.64%	4.42%	**4.54%**	4.36%	4.48%	4.23%	4.34%	4.15%	4.26%
Mean			**2.70%**	**2.78%**	**2.68%**	**2.76%**	**2.66%**	**2.74%**	**2.61%**	**2.69%**	**2.57%**	**2.65%**
Median			2.31%	2.39%	2.30%	**2.39%**	2.29%	2.37%	2.29%	2.37%	2.28%	2.36%

The expected dividend yields for the proxy group as a whole range from 2.65% (calculated on the six-month average stock price) to 2.78% (calculated on the spot stock prices) if calculated on a mean basis. Calculating on a median basis results in a range of 2.36% (calculated on stock prices over the previous 6 months) to 2.39% (calculated both on the spot price on June 15, 2023 and the previous 7 days).

C. Dividend Growth Rate

Q: How did you estimate the long-run dividend growth component (g) of the DCF model?

A: The Constant Growth, or single stage, DCF model assumes investors expect cash flows to grow at a constant rate into perpetuity. I relied on earnings growth estimates from various sources including Value Line, Yahoo! Finance, Zacks and Standard and Poors. Also, I incorporated historical data from Value Line for the last ten years and the last five years, respectively, for earnings per share, dividends per share, and book value per share.

I estimated future growth by averaging the growth estimates from analysts (which resulted in 6.11% as a mean and 6.05% as a median), averaging the historical growth (assigning equal weight to all six components, which resulted in 6.81% as a mean and 7.38% as a median), and using a composite figure of 80% forecasted values and 20% historical values, which produces growth of 6.25% as a mean and 6.34% as a median. The formula relies on an estimate for future growth, so while historical results provide a ballast to the estimates and inform the forecasts, I believe the estimates of future growth are more important for our purposes, which is estimating future growth.[54]

Table SD-12

Company	Ticker	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	S&P Earnings Growth (Mean)	**Average Future Earnings Growth Rate**
American Water Works	AWK	3.00%	8.28%	8.23%	7.61%	**6.78%**
American States Water Company	AWR	6.50%	4.40%	6.30%	14.00%	**7.80%**
California Water Service Group	CWT	6.50%	7.50%		8.00%	**7.33%**
Essential Utilities, Inc.	WTRG	7.50%	5.40%	5.60%	5.73%	**6.06%**
Middlesex Water Company	MSEX	5.00%	2.70%			**3.85%**
SJW Group	SJW	6.00%	6.10%		6.00%	**6.03%**
Atmos Energy Corporation	ATO	7.00%	7.80%	7.48%	7.96%	**7.56%**
Northwest Natural Gas Company	NWN	6.50%	2.80%	3.70%	4.97%	**4.49%**
ONE Gas, Inc.	OGS	6.50%	5.00%	5.00%	5.33%	**5.46%**
Spire, Inc.	SR	8.00%		4.22%	4.86%	**5.69%**
Mean		**6.25%**	**5.55%**	**5.79%**	**7.16%**	**6.11%**
Median		6.50%	5.40%	5.60%	6.00%	**6.05%**

[54] In the long-run, dividends should mirror earnings growth. In the utility context, book value growth should also mirror earnings growth in the long run, since that is the ultimate source of profits for a regulated utility.

Table SD-13

Company	Ticker	Value Line-Earnings Growth-Last 5 Years	Value Line-Earnings Growth-Last 10 Years	Value Line-Book Value Growth-Last 5 Years	Value Line-Book Value Growth-Last 10 Years	Value Line-Dividend Growth-Last 5 Years	Value Line-Dividend Growth-Last 10 Years	**Average Historical Growth Rate**
American Water Works	AWK	15.00%	11.00%	6.00%	5.00%	10.00%	9.00%	**9.33%**
American States Water Company	AWR	6.50%	6.50%	6.50%	5.50%	8.50%	9.50%	**7.17%**
California Water Service Group	CWT	11.00%	7.50%	9.00%	7.00%	6.00%	4.00%	**7.42%**
Essential Utilities, Inc.	WTRG	3.50%	6.50%	14.00%	10.50%	7.00%	7.50%	**8.17%**
Middlesex Water Company	MSEX	11.00%	9.50%	9.50%	6.50%	6.50%	4.00%	**7.83%**
SJW Group	SJW	-2.00%	7.50%	10.50%	9.00%	9.00%	7.00%	**6.83%**
Atmos Energy Corporation	ATO	9.00%	9.00%	12.00%	9.00%	8.50%	6.50%	**9.00%**
Northwest Natural Gas Company	NWN	2.50%	-1.00%	0.50%	1.00%	0.50%	1.50%	**0.83%**
ONE Gas, Inc.	OGS	8.00%		4.00%		10.00%		**7.33%**
Spire, Inc.	SR	1.00%	2.50%	4.00%	6.50%	6.00%	5.00%	**4.17%**
Mean		**6.55%**	**6.56%**	**7.60%**	**6.67%**	**7.20%**	**6.00%**	**6.81%**
Median		7.25%	7.50%	7.75%	6.50%	7.75%	6.50%	**7.38%**

Table SD-14

Company	Ticker	**Average Future Earnings Growth Rate**	**Average Historical Growth Rate**	**Overall Growth Rate (80% Future Earnings, 20% Historical)**
American Water Works	AWK	**6.78%**	**9.33%**	**7.29%**
American States Water Company	AWR	**7.80%**	**7.17%**	**7.67%**
California Water Service Group	CWT	**7.33%**	**7.42%**	**7.35%**
Essential Utilities, Inc.	WTRG	**6.06%**	**8.17%**	**6.48%**
Middlesex Water Company	MSEX	**3.85%**	**7.83%**	**4.65%**
SJW Group	SJW	**6.03%**	**6.83%**	**6.19%**
Atmos Energy Corporation	ATO	**7.56%**	**9.00%**	**7.85%**
Northwest Natural Gas Company	NWN	**4.49%**	**0.83%**	**3.76%**
ONE Gas, Inc.	OGS	**5.46%**	**7.33%**	**5.83%**
Spire, Inc.	SR	**5.69%**	**4.17%**	**5.39%**
Mean		**6.11%**	**6.81%**	**6.25%**
Median		**6.05%**	**7.38%**	**6.34%**

Q: To estimate the dividend growth (g) for your DCF analysis did you include negative growth rates, or zero growth rates?

A: Yes. However, my use was limited to two specific historical growth rates, so it is appropriate in this case and does not bias the results. Also, since the relevant companies are in both my own and Ms. Bulkley's proxy groups, the inclusion of the companies should not be controversial.

Specifically, the earnings growth per share for SJW group was -2% over the past five years, but it was 7.5% over the previous 10 years, book value growth was 10.5% over the past five years, and generally the average historical growth for SJW is 6.83% when including this negative figure. Similarly, there is a negative growth rate of -1% for Northwest Natural Gas for the ten-year earnings, but this is consistent broadly with other inputs from the historical growth rates of Northwest Gas, and the average growth of 0.83% reflects this. I am cognizant of the Commission's guidance in its Final Order in Cause No. 40103 exhorting parties to exercise sound judgement when deciding which inputs to include as part of their analysis.[55] I believe the Commission intended to discourage cherry-picking of inputs to reach a certain result. In this case I considered it reasonable to use negative growth numbers from two utilities, which were in Ms. Bulkley's proxy group, while also including all other historical growth inputs, including abnormally high

[55] In its final Order in Cause No. 40103, the Commission stressed the need to make sound judgments when selecting inputs in cost of equity analyses:

> In all cases, however, the Commission expects the parties to exercise sound judgment when deciding which inputs to include as part of their analysis. In this case, the inclusion of negative growth rates for certain earnings and book value per share data by the OUCC biased the derivation of its growth rates downward. On the other hand, the Petitioner's sole reliance on Value Line's 10-year dividend growth rate data had the opposite effect.

Cause No. 40103, Indiana American Water Company May 30, 1996, Final Order p. 40 - 41 (emphasis in original).

historical rates (such as American Water Works' 15% earnings growth and Essential Utilities' 14% growth in Book Value, both over the past five years). I used all historical numbers available to me constituting a wide range of historical values, and I reached a reasonable result.

The negative numbers are only two of the 57 numbers that combined for the average historical growth rate. It is not sound judgment to remove certain, very limited points of data simply because the limited data is not consistent with the overall averages.

D. 2-Stage DCF Model

Q: Do you use a 2-stage DCF model in your analysis?

A: Yes. I explain in detail below.

Q: Can short to intermediate-term forecasts lead to unreasonably high estimated growth rates (g) in a DCF analysis?

A: Yes. In fact, intermediate term forecasts are not long-term forecasts making it inappropriate to mechanically incorporate them into a DCF analysis. The DCF model requires a growth rate that is sustainable into perpetuity. Thus, even if intermediate term forecasts are accurate, they are not meant to reflect growth beyond the time period the analysts who created the estimates are considering. The long-term growth rates from different sources in some cases may not even extend through the life of rates in a case before the Commission.

By way of example, Value Line uses an estimate of long-term growth comparing the average of earnings from 2020-2022 to the average of earnings from 2026-2028, or to approximately four years in the future. Yahoo! Finance uses a long-

term growth estimate of the next five years, and Zacks and S&P use expected EPS Growth for a 3-5-year period.[56]

Also of note, any growth rate above nominal GDP growth, applied in perpetuity, means that the company, at some point, would be estimated to become larger than that economy's GDP, since it would, at some point, surpass that economy.[57]

Finally, there are well documented findings that intermediate term forecasted growth rates in EPS (forecasted by analysts) tend to be optimistic.

Q: Are you aware of any financial articles that support your position that intermediate term forecasted growth rates tend to be optimistic?

A: Yes. I include these sources in my discussion on General Concerns with Analyst Forecasts found in Appendix D.

Q: How can intermediate-term forecasts in EPS be used while addressing concerns that these growth rates are not sustainable to estimate cost of equity?

A: Due to the methodology, using a 2-stage DCF model can incorporate current forecasted growth rates in the near term (over the forecasted period), while still using a sustainable growth rate over the long term. A National Regulatory Research

[56] From S&P Global, explanation of long-term growth rates. "Long Term Growth Rate (LTG) is a compound annual growth rate based on current and projected EPS values provided directly by the analysts. S&P Capital IQ does not calculate the growth rate based on available EPS Estimates. Most analysts define LTG as an estimated average rate of earnings growth for the next 3-5 years. The exact time frame differs from broker to broker. Since the analysts providing LTG may differ from the analysts providing fiscal year estimates and the variation in time periods of 3-5 years, it is not possible to reconcile LTG with fiscal year estimates." https://spglobal.my.site.com/s/article/10000747

[57] Nominal long-term growth rates in excess of long-term nominal GDP growth imply that the business will eventually grow larger than the economy itself, even if that takes a number of years. A company with $1000 annual revenue in the year 1886 (when American Water was founded), could easily grow at 20% a year for some period of time. However, that growth rate over the intervening 137 years would result in current sales of $70 trillion ($70,441,842,748,748,405), or almost three times current GDP of around $25 trillion. This number would be increasing next year by an additional $14 trillion. This shows the absurdity of excessive growth rates over long periods of time. The formula is $1000*(1.2)^{137.}$

Institute (NRRI) article (discussed in Appendix E) explains long-term sustainable growth for the utility industry cannot exceed the long-term sustainable growth rate in the US economy. Therefore, applying a second stage to the DCF model and incorporating a forecasted growth rate of the U.S. economy (as measured by growth in nominal GDP) as a long-term sustainable growth rate for the second stage, can result in a more accurate estimate of the cost of equity for the DCF model.

Q: Explain the mechanics of the two-stage DCF Model.

A: A 2-stage DCF model is similar to the more traditional single-stage DCF model except that it uses two growth rates (g) instead of a single growth rate. Because two growth rates are used, the equation is more complex than the traditional single stage DCF model $Po = D_1 / (k - g)$. Instead, the equation for the 2-stage DCF model is as follows:

$$P_0 = \frac{DPS_0(1+g_1)\left(1-\frac{(1+g_1)^n}{(1+k)^n}\right)}{k-g_1} + \frac{DPS_0(1+g_1)^n(1+g_2)}{(k-g_2)(1+k)^n}$$

Where:

DPSo = expected dividends per share in year *0*
k = required rate of return (cost of equity) during forecast period
Po = price of stock at year 0
g_1 = growth rate during the first stage
g_2 = growth rate during the second stage
n = length of the first stage (in years)

Unlike the single-stage DCF model, due to its complexity, this equation cannot simply be rearranged to solve for k (the cost of equity [$k = (D_1/P_0) + g.$]).

Instead, one must assume or pick a "target" price (Po) and, through "successive iterations," determine (with given growth rates and a dividend yield) what cost of equity (k) produces the assumed "target" price. In layman's terms, successive iterations means inserting different costs of equity into the equation until it produces the assumed "target" price.

Hypothetically, assuming a price of $100.00 per share, with annual dividends of $3.00 per share (a dividend yield of 3.0%), and a growth rate of 6.0% during the first stage, (5 years), with a long run growth rate of 5.0% during the second stage, the rate of return necessary to produce a price of $100.00 per share is 8.29%. Mechanically, this is done by plugging in different rates of return (costs of equity or "k") into the above equation until it calculates the cost of equity (k) that produces a price of $100.00 per share.

Fortunately, the "goal-seek" function in Excel can run the iterations and can be used to determine what cost of equity produces a price of $100.00 share (a target price). Therefore, I used the "goal-seek" function in Excel to calculate the result.

Q: What inputs did you use to complete your 2-stage DCF analysis?

A: I calculated four different 2-stage DCF models. I created two models with the assumptions described below, calculated with both mean and median inputs. I also calculated two models modifying Ms. Bulkley's single stage inputs; specifically, those that she used to calculate the market return for her CAPM analysis.

Q: Please explain the inputs in your 2-stage DCF models.

A: For the first calculation I used the mean dividend per share of 2.68% established in my Constant Growth (single-stage) DCF model previously. This was based upon the one-

week average stock price and the annualized current dividends sourced from Yahoo! Finance for my proxy group.

Then I used an overall growth rate of 6.25%, which is the overall growth rate I used in the Constant Growth DCF model previously derived (calculated with mean inputs) from an 80% weighting of earnings growth estimates from four different sources and a 20% weighting for historical growth factors (5 and 10 years, for earnings, book value, and dividends, respectively) from Value Line.

I assumed the first phase of my 2-stage model lasted for 15 years. 15 years is approximately 3-4 times as long as the time period the analysts covered, but in my professional opinion I believe it is reasonable to assume that these estimates will not immediately fall to a lower rate. Therefore, 15 years would be reasonable and would represent a substantial amount of time for the first stage and transition to the second.

My long-term growth rate was assumed to be 4.0%, which is approximately the rate of long-term nominal GDP growth, which serves as a theoretical growth ceiling in the long-term for company growth.[58] The inputs resulted in a k value (ROE) of 7.61%. For the second calculation, the process was the same, except the inputs were based on the median values for dividend yield (2.30%) and growth (6.34%). This results in a k value (ROE) of 7.16%.[59]

Q: You also completed a 2-Stage DCF analysis based on Ms. Bulkley's preferred

[58] The CBO estimates 3.7% nominal GDP growth from 2023-2052, in Long-Term Economic Projections, found here: https://www.cbo.gov/data/budget-economic-data#4. The Federal Reserve estimates 3.8%, from figure 1 "Longer Run change in GDP" median estimate of 1.8% for real GDP and 2.0% for PCE longer run inflation, here : https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20230614.pdf. The average of these two estimates is 3.75%, I rounded up to 4.0% for purposes of this calculation.

[59] Calculations may be found in OUCC Attachments SD-2, tab "Two-Stage DCF."

inputs for her CAPM. Please explain your methodology.

A: For Ms. Bulkley's CAPM analysis, she utilized an estimated market return of 12.50%, which consisted of a dividend yield of 1.75% and a growth estimate of 10.65% (see Attachment AEB-6). This growth estimate is far in excess of long-term nominal GDP growth and is thus unsustainable in the long run. Using her inputs of a 10.65% growth and 1.75% dividend yield, with a 15-year term for the first stage and a 4% growth for the terminal phase, results in an ROE of 7.92%. If growth is adjusted using only the growth estimates for dividend paying companies used to calculate the dividend yield (growth of 8.96%), then the result is a 7.28% ROE.[60] As discussed elsewhere, you cannot use a growth rate that is comprised of a different group of companies than the dividend yield is calculated upon without rendering the results highly suspect.

Q: Why is it necessary to complete a 2-Stage DCF analysis in a mature industry such as the water industry?

A: Dealing with a mature industry does not, in any way, negate the benefits of completing a 2-Stage DCF model. No company, whether it be a high growth company like Apple, Tesla or Nvidia or relatively low growth companies such as utilities can grow over the long run at rates exceeding the growth rate of the economy as a whole. This would ultimately result in nonsensical situations where companies which are the components of an economy are estimated to be larger than the economy itself. The higher the short-term growth, the more dramatic the adjustment when growth rates in perpetuity are adjusted downwards.

E. Concerns with Ms. Bulkley's DCF analysis

[60] Calculations may be found in Attachment SD-2, Tab "2-Stage DCF for Market Return."

Q: Please summarize your disagreements with Ms. Bulkley's DCF analysis.

A: There are only two inputs to the DCF analysis for both Ms. Bulkley and myself. Ms. Bulkley provides 30-day, 90-Day and 180-Day stock prices to calculate dividend yield and treats these all equally in her calculations.

However, I provide these data points, and also provide the spot price and the 1-week inputs. Where Ms. Bulkley provides a range, I provide a recommendation based upon preferential inputs.

Specifically, for the single phase DCF, a dividend yield based on a full week of stock prices is more appropriate. Furthermore, the stock prices in December of last year are not relevant in a significant way to the determination of the current dividend yield. Consistent with the efficient market hypothesis, discussed in testimony, a full week of stock prices is sufficient to alleviate significant volatility and arrive at the market's best estimate of the future estimated yield.

In addition, while we both express both a mean and median for the DCF, I prefer the mean, because I consider it a more appropriate way to reflect the inputs. (If there is a very significant outlier, the analyst should address that, rather than accepting the median as the proper result.) One purpose of using a median as opposed to a mean is that it eliminates aberrations caused by outliers. In this process, outliers are excluded by another method. They are not included in the proxy group, or the outlier may be addressed by another means. In this case, there were no outlying figures that needed to be addressed.

Finally, I calculated extreme ranges of my potential ROE by incorporating on the low end both the lowest dividend yield (based on the average price of the

individual stocks over various time periods) and the lowest estimated growth rate. This is an extremely conservative approach, but it provides a range. I did the opposite for the high end of the range. Ms. Bulkley based her high and low estimates on the 30, 90 and 180 range, and used the lowest growth, so our results should be similar, although since I used additional time periods, my range would potentially be wider (since I was considering the lowest or highest results from a wider variety of potential inputs).

Due to the method of calculating this range, the usefulness of the extremes of this range are significantly limited. Further, Ms. Bulkley did not use historical growth rates in her calculation. While the earnings forecasts are more important, historical results carry weight. So, I weighted these with 20% of my estimate of growth. The Commission in the past has encouraged the use of historical inputs (per Appendix F). Ms. Bulkley and I also disagree on the appropriate composition of the proxy group, which will affect the results.

Q: What range of estimated costs of equity does Ms. Bulkley propose for her DCF models and how does this contrast to your outputs?

A: Ms. Bulkley proposes a range of estimated cost of equity of 8.57% to 10.99%, based on the average growth rate her estimate is 9.71% for her mean model and 9.90% for her median model. My results recommend 9.00% for the mean (my preferred metric) and 9.32% for the median. My range is between 7.47%-9.77% for the mean and 8.20% to 10.13% for the median. I also used two-stage modeling, which results in a recommendation of 7.61% based on mean inputs (again, my preferred analysis) and 7.16% based on median inputs.

Q: Summarize your comments on Ms. Bulkley's estimates of growth (g).

A: The goal in estimating growth (g) in the DCF model is to derive a reasonable long-term or sustainable estimate of growth in dividends. Ms. Bulkley' s DCF analysis relies exclusively on intermediate term forecasts in EPS to estimate the growth in her DCF model. Even if one assumes that there is no upward bias in analyst estimates, the estimates used by Ms. Bulkley are still intermediate, not long-term forecasts, and therefore are more likely to be unsustainable over the longer term. Ms. Bulkley's overly optimistic growth rates (g) overstate the results of her DCF analysis.

Q: Is it outdated to say that analysts' forecasts are optimistic?

A: No. See Appendix D and E for a further discussion on potential bias in analyst forecasts.

F. Discussion on current environment for utility stocks

Q: Does Ms. Bulkley make any statements about the current valuation of utility stocks?

A: Yes. Ms. Bulkley expresses concerns that utility stocks are currently overvalued, making her DCF analysis not as reliable as it otherwise would be.[61]

Q: Do you agree with this opinion of Ms. Bulkley?

A: I do not. I do not fundamentally disagree that interest rates will affect utility stocks, as they are traditionally considered low-risk stocks that are owned for their yield. However, generally, market participants understand this relationship. The market consists of thousands or millions of participants. The Commission should not give weight to an analyst's statement that the market is wrong on a market sector. For every seller of a utility,

[61] Ms. Bulkley, testimony section V.D, page 20. I am paraphrasing, but Ms. Bulkley discusses for about 6 and a half pages how utility stocks are over-valued and they are primed for a decline. She concludes that "expected change in market conditions supports consideration of the higher end of the range of cost of equity results produced by the DCF models. Moreover, prospective market conditions warrant consideration of forward-looking cost of equity estimation models, such as the CAPM and ECAPM, which may better reflect expected market conditions." (p.26)

there is a buyer. Presumably, for each trade, a seller believes the stock is overvalued and a buyer believes the stock in undervalued. A market price balances these opinions. Ms. Bulkley may fall on the side of the seller who believes the stocks are overpriced, but her opinion carries no more weight than all the current holders of utility stocks.

I reviewed analyst estimates for the stocks in my proxy group. These results are in OUCC Attachment SD-2, at the tabs for Value Line, Yahoo! Finance and S & P. To summarize, there are 10 companies in my proxy group. Value Line considers the average "Timeliness" rating on these stocks to be 3.1 out of five, which is basically average. S&P provides an average recommendation of 2.56 (2 being outperform and 3 being hold), or generally midway between an outperform and a hold. Yahoo! Finance has an average rating of 2.41 (similar to S&P, although slightly higher). It is hard to reconcile average to above average ratings on these stocks with being overvalued and potentially invalidating one of our core models for determining cost of equity.

VIII. APPENDIX D

General Concerns with Analyst Estimates

On page 106 of his book, The Equity Risk Premium-The Long Run Future of the Stock Market, Bradford Cornell states as follows:

> The practical problem raised by relying on analysts' forecasts is that such forecasts typically have short horizons. Services that aggregate such forecasts, including those by IBES and Zack's Investment Research, do not provide forecasts beyond 5 years. *From the standpoint of the DCF model, which extends into perpetuity, this horizon is too short.*
>
> *Emphasis added.*

Mr. Cornell goes on to discuss the problems with assuming that the forecasted growth rate can be maintained in perpetuity.

> In most cases, the IBES forecasts are greater than the long-run economic growth rates. Such growth rates clearly cannot be maintained forever. Although it is possible that a company's dividends can grow significantly faster than the general economy for 5 years, if such a growth rate were maintained indefinitely, the company would eventually engulf the entire economy.

Also Cost of Capital - Estimation and Application 2nd edition by Shannon Pratt makes the following assertions about using analyst forecasts to estimate cost of equity:

> It is theoretically impossible for the sustainable perpetual growth rate for a company to significantly exceed the growth rate in the economy. Anything over a 6-7% perpetual growth rate should be questioned carefully.
>
> A common approach to deriving a perpetual growth rate is to obtain

> stock analysts' estimates of earnings growth rates. The advantage of using these growth estimates is that they are prepared by people who follow these companies on an ongoing basis. These professional stock analysts develop a great deal more insight on these companies than a causal investor or valuation analyst not specializing in the industry is likely to achieve.
>
> There are however, three caveats when using this information:
>
> 1. These earnings growth estimates typically are for only the next three to five years; they are not perpetual. Therefore, any use of these forecasts in a single-stage DCF model must be tempered with a longer-term forecast.
>
> 2. Most published analysts' estimates come from "sell-side" stock analysts who work for firms that are in the business to sell stocks. Thus, although their earnings forecasts fall within the range of "reasonable" possibilities, they may be on the high end of the range.
>
> 3. Usually, these estimates are obtained from firms that provide consensus earnings forecasts; that is, they aggregate forecasts from a number of analysts and report certain summary statistics (mean, median, etc.) on these forecasts. For a small publicly traded firm, there may be only one or even no analyst following the company. The potential for forecasting errors is greater when the forecasts are obtained from a very small number of analysts. These services typically report the number of analysts who have provided earnings estimates, which should be considered in determining how much reliance to place on forecasts of this type.
>
> Many of the problems inherent in using a single-stage model to estimate cost of capital are addressed by using a multistage model.

These texts explain how analyst forecasts can overstate long term growth in earnings. Analyst growth forecasts are for 3-5 years and are not long-term estimates. The texts also explain why growth rates greater than the growth rate of the U.S. economy are highly questionable. Ms. Bulkley uses growth rates that exceed growth in the U.S. economy in both her DCF analyses and her DCF-driven CAPM analyses. Because both are based on overstated and unsustainable forecasted growth rates in EPS, they overstate cost of equity.

IX. APPENDIX E

Potential Bias in Analyst Forecasts

The National Regulatory Research Institute (NRRI) Journal of Applied Regulation supports both of my concerns about using unreasonably high growth rates in a DCF analysis with the following:[62]

> Financial research has made it clear that no company, especially a utility, can sustain a growth rate over the long run that exceeds the growth rate of the economy.[63] Since 1959 the long-term sustainable real growth rate in the economy has been about 3.5 %.[64] If long-term inflation is expected to be about 2.5%, the maximum long-term sustainable nominal growth for any company today is about 6.0%. Since utilities are amongst the slowest growing firms in the economy, a utility today would be expected to have a long-term sustainable growth rate that is significantly below 6%.

The article also notes a tendency toward upside bias in analyst forecasts:

> The other problem with using analyst forecasts as the long-term growth rate in the DCF model is such forecasts are biased to the upside. The evidence on this issue is overwhelming.[65] The forecast bias persists year after year in large part due to the incentive structures in place at many Wall Street firms that tend to reward more optimistic projections and to discourage the incorporation of potentially negative views in analysts' forecasts.[66]
> Emphasis added.

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[62] How improper risk assessment leads to overstated required returns for utility stocks by Steven G. Kihm NRRI Journal of Applied regulation-Volume 1, June 2003, p. 98.

[63] Robert D. Arnott and Peter L. Bernstein "What Risk Premium is Normal? Financial Analysis Journal, 58 (2) March/April 2022; 64-85.

[64] Council of Economic Advisors, Economic Report of the President, 2002.

[65] See for example, Vijay Kumar Chopra, "Why so much error in analysts's Earning Forecasts?" Financial Analysts Journal, 54 (6) November/December 1998); 35-42.

[66] See Masakao N. Darrough and Thomas Russal, "A Positive Model of Earnings Forecasts: Top Down Versus Bottom Up." Journal of Business, 75 (1) (January 2002) 127-52.

The Wall Street Journal published an article on January 27, 2003 titled Analysts: Still Coming up Rosy. The article discusses how, despite a $1.5 billion settlement pending with regulators over stock research conflicts, analysts are unshaken in their optimism that most of the companies they cover will have above average double-digit growth rates during the next several years. The article asserts that such growth is unlikely:

> Historically, growth in corporate earnings has slightly lagged nominal growth in gross domestic product. In other words, profits can only grow as fast as the economy. Right now, optimistic Wall Street analysts expect earnings to defy history and grow far faster than that.

And:

> Those overly optimistic growth estimates also show that, even with all regulatory forces on too-bullish analysts allegedly influenced by their firms' investment-banking relationships, a lot of things haven't changed: Research remains rosy and many believe it always will.

The concern regarding bias in intermediate term analyst forecasts, such as those relied upon by Ms. Bulkley, is also mentioned in The real cost of equity by Marc H. Goedhart, Timothy M. Koller and Zane D. Williams (McKinsey Quarterly Autumn 2002):

> Some theorists have attempted to meet this challenge by surveying equity analysts, but since we know that analyst projections almost always overstate the long-term growth of earnings or dividends,[67] analyst objectivity is hardly beyond question.

In a more recent article, Equity analysts: Still too bullish by Marc H. Goedhart, Rishi Raj and Abhishek Saxena (McKinsey Quarterly - April 2010) the authors reiterated the concern regarding analyst forecast bias:

[67] See Marc H. Goedhart, Brendan Russel and Zane Williams, "Prophets and profits?" McKinsey on Finance, Number 2, Autumn 2001.

> No executive would dispute that analysts' forecasts serve as an important benchmark of the current and future health of companies. To better understand their accuracy, we undertook research nearly a decade ago that produced sobering results. Analysts, we found, were typical overoptimistic, slow to revise their forecasts to reflect new economic conditions, and prone to making increasingly inaccurate forecasts when economic growth declined.[68]
>
> Alas, a recently completed update of our work only reinforces this view - despite a series of rules and regulations, dating to the last decade, that were intended to improve the quality of the analysts' long-term earnings forecasts, restore investor confidence in them, and prevent conflicts of interest.[69] For executives, many of whom go to great lengths to satisfy Wall Street's expectations in their financial reporting and long-term strategic moves, this is a cautionary tale worth remembering.

Also, the Abstract of an Article titled, Do Analyst Conflicts Matter? Evidence from Stock Recommendations by Anup Agrawal and Mark Chen (Journal of Law and Economics, 2008, V 51), includes the following statement:

> However, evidence from the response of stock prices and trading volumes to upgrades and downgrades suggests that the market recognizes analyst conflicts and properly discounts analyst options.

While it predates the October 31, 2003, final judgment in the Global Research Analyst Settlement ("GRAS"), the following article: Stock Analysts Still Put Their Clients First, Financial Analysts Journal, Volume 59 Issue 3, May 1, 2003, discusses the separation of research and investment banking services and its influence on analyst estimates. The article

[68] Id

[69] SEC Regulation Fair Disclosure (FD) passed in 2000, prohibits the selective disclosure of material information to some people but not others. The Sarbanes-Oxley Act of 2002 includes provisions specifically intended to help restore investor confidence in the reporting of securities analysts, including a code of conduct for them and a requirement to disclose knowable conflicts of interest. The Global Settlement of 2003betweenregulators and ten of the largest US investment firms aimed to prevent conflicts of interest between their analyst and investment businesses.

concludes that the separation of research and investment banking services has not resolved the concern that analyst forecasts are still upwardly biased.

> The new requirements *imply* that independent research (brokerage research without investment banking ties) is better for investors. But why independent analysts will be less vulnerable than brokerage firm analysts to the same pressures for optimism is unclear. Analysts themselves have remarked that one source of strong pressure for "optimism biases" in recommendations is the need to keep access to the managers of the companies they cover; in other words, issue positive research or expect to be cut off from management guidance. Unfortunately, the Sarbanes-Oxley bill, which mandated many improvements in corporate managers' financial practices, did nothing to reduce the unethical practice by many managers of communicating only with those analysts who "cooperate" with management's implicit (and usually positive) forecasts of the future. Finding a way to fix this blind spot may be more important than all the other "sticks" regulating analysts combined.
>
> Interestingly, the *Wall Street Journal* reported in April 2003 that after reviewing disclosure reports issued as a result of the new requirements, they concluded that the brokerage firms of the top investment banks are still more likely to give optimistic research recommendations to their own banking clients. Of course, the new disclosure requirements attempt to protect investor clients by making them aware of investment research's potential as an adve1iising medium, but the attempt works only if investors read and understand the disclosures. Institutional investors are probably more likely than retail investors to read, put into context, and fully appreciate these new disclosures. Emphases added.

While the GRAS may have reduced some of the causes of analyst bias, the problem of optimistic analyst forecasts has not been eliminated. Moreover, the Equity analysts: Still too bullish article by Goedhart, Raj and Saxena and Do Analyst Conflicts Matter? Evidence from Stock Recommendations by Agrawal and Chen were both published several years after the GRAS. Both articles support my opinion that concerns about analyst optimism still exist.

When using analyst forecasts of EPS to estimate growth (g) in a DCF analysis, both the

potential for analyst bias and the intermediate term nature of the forecasts may make these estimates unreliable. Even assuming no analyst bias, unsustainable growth rates should be adjusted or given reduced weight. This is particularly emblematic in the DCF analysis Ms. Bulkley conducts on companies in the S&P 500 to calculate her estimated market growth where more than half the companies with estimates have a 3-5 year forecasted growth rate in EPS 10.0% or above.[70]

[70] Of the 397 companies that Ms. Bulkley used to calculate a 10.65% growth rate, 201 of them had growth of 10% or higher.

X. APPENDIX F

Use of Historical Growth Estimates

Q: What data should the Commission use to estimate growth (g) in a DCF analysis?

A: Just as this Commission has done in past cases, such as Indiana American's Cause No. 43860, it should review and give weight to both historical and forecasted data of growth rates in EPS, DPS, and BVPS.

Q: Has the Commission supported the use of DPS, BVPS, and EPS data in estimating the growth (g) component of the DCF calculation?

A: Yes. In Gary-Hobart Water Corporation (acquired by Indiana American), Cause No. 39585, in its final order dated December 1, 1993, at page 17, this Commission stated that "although we agree historical and projected dividend information are important considerations when estimating future rates of growth for the DCF model, we do not believe that book value and earnings data should be ignored." In Cause No. 42029, the Commission stated that it "has consistently sanctioned the use of both historical and forecasted per share data" and that it "continue[s] to believe that both historical and forecasted earnings, dividends and book value per share data are useful when employing the DCF model." *(Indiana American Water Co.,* Cause No. 42029, November 6, 2002, Final Order, p. 32.)

The Commission has more recently affirmed its determination that historical and forecasted earnings and dividends and book value per share data are useful when employing the DCF model in Cause No. 43680:

> The Commission expects the parties to exercise sound judgment when deciding which inputs to include as part of their analysis.

> We have concerns regarding Mr. Moul's sole reliance on analysts' intermediate-term forecasts in his DCF model. The Commission believes that both historical and forecasted earnings and dividends and book value per share data are useful when employing the DCF Model. Although Mr. Gorman agreed with Mr. Moul's forecasted growth rates, Mr. Gorman recommended adjustments that modify Mr. Moul's outcomes to be much more in line with Mr. Kaufman's and Mr. Gorman's results. We agree with Mr. Kaufman that Mr. Moul's reliance on intermediate-term forecasts result in a growth rate that is unrealistically high.
>
> We also agree with Mr. Gorman that the constant growth DCF return used by Mr. Moul for the Water Proxy Group is not reasonable and represents an inflated return for Indiana-American at this time. The constant growth DCF results for the Water Proxy Group are based on growth rates of 7.29% (Mr. Gorman) and 7.5% (Mr. Moul). The Commission finds these growth rates to be unsustainable for the long-term, which is required by the constant growth model.

(Indiana American Water Co., Cause No. 43680, April 30, 2010, Final Order, p. 47.)

XI. APPENDIX G

Capital Asset Pricing Model (CAPM) Analysis

Q: Does the CAPM give a better indication of the required returns than the DCF model?

A: No. If the DCF is used with a reasonable estimated growth rate of dividends, it produces results at least as reasonable as the CAPM. The CAPM is typically more controversial and less reliable than the DCF model.

Brigham and Louis Gapenski comment on the lack of precision in the CAPM on page 64 of their text Intermediate Financial Management (2nd Edition):

> Although the CAPM appears to provide neat precise answers to important questions about risk and required rates of return, the answers are really quite fuzzy. The simple truth is that we do not know precisely how to measure any of the inputs required to implement the CAPM. These inputs should all be ex ante, yet we have available only ex-post data. Further as we shall see in chapter 4, historical data such as k_M and k_{RF} and beta vary greatly depending on the time period studied and the methods used to estimate them. Thus, although the CAPM may appear precise, its inputs cannot be estimated with any precision at all, and hence the estimate of k_i found through the use of CAPM are subject to large errors.

Q: Please describe your CAPM analysis.

A: The Capital Asset Pricing Model, or CAPM, is a form of risk premium analysis used to estimate the cost of capital. The CAPM is based on the premise that investors require a higher return for assuming additional risk. Total risk is divisible into two categories: systematic risk and unsystematic risk. Systematic risk is risk that affects the entire market, including inflation, monetary policy, fiscal policy, or politics. Unsystematic risk is risk unique to the company and may include the characteristics of the industry in which the company operates as well as factors involving the individual company being examined,

such as strikes, management errors or ability, merger activity, or individual financing policy.

Investors can mitigate unsystematic risk through diversification. Because returns of individual securities of a portfolio do not usually move in the same direction at the same time, the total risk of a portfolio is less than the risk of the individual securities that make up the portfolio. Because investors can eliminate unsystematic risk through diversification, the market does not compensate investors for assuming unsystematic risk. Conversely, systematic risk, sometimes referred to as market risk, cannot be eliminated through diversification. However, because investments will move with different relationships to the market, investors can form a portfolio to assume the amount of market risk they wish. An investor's required return depends on the market risk that the investor assumes.

Q: How is systematic (market) risk measured?

A: Beta is the measurement of an investment's relationship to the market. More specifically, beta measures an asset's price volatility compared to the market. By definition, the market has a beta of one. The market refers to the returns on all assets. Because it is very difficult to measure the return on all assets, analysts typically rely on a market index, such as the Standard & Poor's 500 Index, as a proxy for the market. Assets more volatile than the market will have a beta greater than one and, thus, they are considered riskier than the market. Similarly, assets that are less volatile will have a beta less than one and are considered less risky than the market. Utility stocks would be considered low-risk, and almost always have a beta less than one, and that is true in the present cause.

The CAPM formula can be stated as follows:

K	**=**	**Rfc + β*(Rm-Rf) where,**
K	=	Cost of Equity
Rfc	=	Current Risk Free Rate of Return
β	=	Beta
Rm-Rf	=	Expected Market Equity Risk Premium
Rm	=	Market Equity Return
Rf	=	Risk Free Rate of Return

The return on an asset (K) equals the risk-free rate of return (Rfc) plus its beta (β) multiplied by the market equity risk premium (Rm - Rf). The market equity risk premium equals the market equity return minus the risk-free rate of return.[71]

Q: What is your expert opinion of the CAPM?

A: In the initial introduction to the CAPM in Cost of Capital,[72] this textbook quotes the following from Michael Dempsey, "Nevertheless, we consider that in choosing to attribute CAPM rationality to the markets, we are imposing a model of rationality that is firmly contradicted by the empirical evidence of academic research." As an introduction to the model, this is not a full-throated endorsement. However, the very next sentence states "Despite its many criticisms, the CAPM in its pure form is still one of the most widely used models for estimating the cost of equity capital…"[73].

The CAPM is typically more controversial and less reliable than the DCF model. Different applications of CAPM may result in vastly different cost of equity estimates. For example, the source of beta can influence the results of a CAPM analysis. If a market risk premium of 5.0% is used, a difference in beta of only 0.10 changes the results of a CAPM

[71] I refer to the Market Risk Premium or the Equity Risk Premium as interchangeable concepts throughout my testimony, the difference between the two concepts is not relevant for purposes of establishing a Utility ROE, since there is a general understanding that by "market" we mean the stock market and not other investable assets.

[72] Cost of Capital, Applications and Examples, Fifth Edition. Shannon P. Pratt and Roger J. Grabowski, page 190.

[73] *Id*.

analysis by 50 basis points. Ms. Bulkley uses market risk premiums of 8.60%, 8.68% and 8.79% (Bulkley Attachment AEB-4, based on Projected 30-year US Treasury Yield, Near-term forecasted 30-year treasury bond yields, and the current 30-day average of 30-year treasury yields), a difference in beta of 0.10 changes the results of her CAPM analysis by 86 to 88 basis points.

The method used to estimate the market risk premium can be controversial. In this case there is a significant disparity between the market risk premium in Ms. Bulkley's model and my own.

A forecasted risk premium can also be estimated. However, great care needs to be taken when using a forecasted market risk premium. Methodologies such as the one used by Ms. Bulkley can produce nonsensical results (in this case, although I believe her analysis to be flawed and higher than warranted, I do not believe it is nonsensical. I am simply stating that the approach used could lead to nonsensical results). In this case, I relied on external estimates of the long-term market return, and external estimates of the current market risk premium. These differing approaches yield wildly different results for one of the most important single factors in the CAPM model.

1. Forecasted risk premium

Q: Do you propose to use forecasted information to determine the risk premium?

A: Yes. Both historical and forecasted equity risk premiums provide relevant insight to estimate cost of equity. A hard to dismiss critique came from Roger Ibbotson's dissertation advisor, Eugene Fama. In a series of papers written with Dartmouth College's Kenneth French, Fama has argued that the capital asset pricing model, or at least its 1970s corollary,

that the risk premium is constant doesn't match the facts. "My own view is that the risk premium has gone down over time basically because we have convinced people that it's there." Fama says. Ibbotson's stock market forecasting model is thus a victim of its own success.

Ibbotson agrees that Fama has a point, and that he can no longer bank on the historical equity premium to predict the future. (Underlined emphases added)

> Importantly, even Dr. Ibbotson has now expressed concerns about using historical data to estimate the risk premium. At the time of this article Dr. Ibbotson had forecasted a long-run equity--return forecast of 9.27% compared to an annual return on stocks from 1925 to the [then] present day of 10.31%.

Q: What forecasted market risk premium have you used in your CAPM analysis?

A: I have used twelve separate sources to forecast a market return. These sources may be found in OUCC Attachment SD-2. The average projected long-term market return from these sources was 7.02%. The range was from 5.1% from Vanguard for 10-year equity returns (or 5.5% for 20-year returns from Fidelity) to 8.89% from Professor Damodoran (or 8.40% from the CFO survey issued by the Richmond Federal Reserve). From this expected Market Return, the appropriate risk-free rate must be subtracted to get the equity risk premium which is used in the CAPM formula. For instance, subtracting a risk-free rate of 3.89% from an estimated market return of 7.02% results in an ERP of 3.13% Ms. Bulkley used an anticipated Market return of 12.50% (Ms. Bulkley, Attachment AEB-6). This is approximately a 5.5% difference in returns anticipated by sources ranging from Fidelity, Blackrock, Vanguard, JP Morgan, the Indiana Public Retirement System and American Water's own pension return forecasts, vs. Ms. Bulkley's DCF model incorporating intermediate-term analyst earnings estimates. Put another way, Ms. Bulkley

uses an anticipated return for the market 78% higher than the average from these sources. Since we broadly agree on the risk-free rates used, the difference in the equity risk premium is significantly greater, approximately 3.13% for my estimate and 8.61% for Ms. Bulkey's, or a difference of over 2.5 times.

Q: Did you also use forecasts of the current equity risk premium directly?

A: Yes. There are three sources that provide this information directly, and especially Kroll (formerly Ibbotson or Dunn and Bradstreet) is one that the OUCC has relied upon heavily in the past. The three sources are Kroll (5.5%, updated June 2023), KPMG (5.5%, updated March 2023), and Professor Damodoran (5.25%, updated June 2023, Cash Returns). The average is 5.42%.

Q: Did you utilize these three estimates of the equity risk premium into your models?

A: Yes, in fact it results in my preferred metric. These estimates are designed specifically to answer the question we are asking, which is what the Equity Risk Premium is right now. They are all current as well.

2. Risk-free rate of return

Q: Is the risk-free rate of return also controversial?

A: Aside from the market risk premium controversy, financial analysts do not agree on the determination of the risk-free rate. Theoretically, the risk-free rate is the rate of return on a completely risk-free asset. In practice, analysts typically use yields on United States Treasury Securities as a proxy for the risk-free rate. An analyst could use the yield on very short term 91-day Treasury Bills as a proxy for the theoretical risk-free rate of return. However, the volatility of 91-day Treasury Bill rates has led many analysts to use longer term Treasury instruments as an estimate of the risk-free rate.

Q: How did you estimate the risk-free rate?

A: I analyzed the 10-year and the 30-year treasury long-term yields from both a current and a forecasted time frame. For the current results, I calculated yields based on the spot yield (meaning on June 15, 2023), the 7-day average yield (prior to June 15, 2023), and one month, three month and 6-month average yields.

Q: What metric do you use?

A: My preferred metric is the 30-year 7-day average yield because at this point in time, the 30-year yield is the most reliable (meaning the most market driven and the least influenced by the short-term gyrations and manipulations of the Federal Reserve). Further, the Treasury market is so deep and robust that the market will have minimal volatility from day to day that is not explained by relevant information, and that since the purpose of using longer time frames for calculation of current yields is to remove this volatility, this is of minimal value in the treasury market.

3. Current vs. Forecasted Interest Rates

Q: Should analysts use current or forecasted interest rates at this time?

A: I present both forecasted yields and current yields, but I have a strong preference for the current, actual market yields. However, in the current situation, my preferred metric of using the 7-day average yield for the 30-year bond (which is my preferred term at this time), is 3.89% and the forecasted yield is 3.85%. Since this difference is relatively minimal regarding my preferred metric, any disagreements on the merits of relying extensively on forecasted rates loses most of its relevance.

4. Beta

Q: What source did you review to estimate beta?

A: Like Ms. Bulkley, I relied on Value Line and Bloomberg as two sources of Beta. In addition to those two sources, I used Yahoo! Finance, Zacks, NYSE, and Standard and Poors (S&P).

Q: Is there a difference in the Betas calculated from different sources?

A: Yes. Although Beta is a mathematical construct, the choice of time frames, data points, and indexes can result in a significant difference of calculated Betas. Further, both Bloomberg and Value Line use adjusted Betas, meaning that the mathematical results are adjusted towards one. For utilities which are low risk (a Beta below one) this means that both Value Line and Bloomberg will result in an increased Beta (and hence a higher resultant ROE when inputted into the CAPM formula). None of the other sources of Beta are adjusted. The adjustment results in a very significant difference in Beta between the adjusted and the unadjusted sources (on average a 0.79 Beta for Value Line and Bloomberg for my Proxy Group and 0.58 for the unadjusted Betas).

Q: Please discuss how Ms. Bulkley estimated her Beta coefficient for the calculation of her CAPM analyses.

A: Ms. Bulkley used both Value Line and Bloomberg inputs.

Q: Do you agree with Ms. Bulkley's use of these two sources?

A: Yes. However, I believe additional sources should also be used. Both Value Line and Bloomberg are adjusted Betas, meaning they will always be higher (and thus result in a higher ROE) then an unadjusted Beta for low-risk stocks. Other sources I used (including Standard and Poors, NYSE, Zacks, and Yahoo! Finance) also provide Beta. They provide unadjusted Betas. These have just as much validity as the adjusted Betas (otherwise, these

reputable sources would not publish these results), and I believe they should be used as well.

Q: Are there any other sources of difference in the Betas Ms. Bulkley and you used in your calculations?

A: Yes. Betas will differ because of the composition of our respective proxy groups.

Q: Can you provide some examples of how much Beta may differ based on different assumptions?

A: Yes. I ran my own Betas for American Water Works for different time periods (3 years or 5 Years), different data points (daily, weekly, monthly, or quarterly) and different indexes (S&P 500 and NYSE Composite). Many other selections may be chosen, but this gives a sense of the range of Betas that may be generated. The table below shows the results of this analysis.

Table SD-15

Years	Frequency	Index Used S&P 500	NYSE Composite
3	Daily	0.63	0.63
3	Weekly	0.78	0.80
3	Monthly	0.99	0.83
3	Quarterly	0.86	0.91
5	Daily	0.70	0.71
5	Weekly	0.92	0.88
5	Monthly	0.65	0.52
5	Quarterly	0.47	0.46

5. Market Risk Premium

Q: Please discuss how Ms. Bulkley estimated 8.60%-8.79% market risk premiums. (Attachment AEB-4.)

A: Ms. Bulkley uses the DCF model to estimate the cost of equity for the S&P 500. She multiplies each company's "Current Dividend Yield" and its estimated "Long Term Growth Est" by its weight in the S&P 500 index to determine a "Cap Weighted Dividend

Yield" and its "Cap-weighted Long term Growth Est." Ms. Bulkley sums each figure to produce a 10.65% "Estimated Weighted average Long- term Growth Rate" and a 1.75% "Estimated Weighted Average Dividend Yield." These two figures produce an "Estimated Required return for the S&P 500" of 12.50%. Ms. Bulkley then subtracts various 30-year US Treasury Bond yields to estimate her risk premiums.

Q: Do you agree with Ms. Bulkley's methodologies to estimate a risk premium?

A: No. First, Ms. Bulkley reviews the S&P 500 and only incorporates companies that have a long-term growth estimate of between 0-20%. This screen reduces the number of companies analyzed to 397 (in other words, eliminating approximately 20% of the S&P 500 from consideration), this is an adjustment that eliminates the most egregious results of this approach, and in that sense, I agree with this adjustment. As a side note, the fact that more than 20% of the S&P 500 companies have "long-term" growth rates outside of this range demonstrates the unsuitability of using the long-term analyst growth rates that are for 3-5 years (for Value Line, which are the growth estimates she used) over the long term as conceived of in the Constant Growth DCF model (which is in perpetuity). Those 397 companies have a growth rate of 10.65% on average, which is what she used for her growth rate. As a next step, she eliminated all companies within the universe of 397 companies that did not have an estimated dividend yield, leaving 337 companies remaining. These 337 companies had a cap-weighted dividend yield of 1.75%, and this 1.75% is what she used in her calculation of the expected market return.

The first issue is that the growth estimates she used are simply not suitable for a perpetuity analysis. This is demonstrated both by the significantly higher results her model generates versus reputable market prognosticators (including American Water Works for

its own pension returns on its equity holdings). The way to address this is to use a two-stage DCF reflecting appropriate long-term growth estimates in the long-term.

The second issue is that the growth must be calculated on the same set of companies as the dividend yields. The growth of only the 337 companies in the S&P that meet her above criteria is 8.96%. Just this simple change reduces her market return from 12.50% to 10.79%.

Incorporating a growth rate of 8.96% over a term of 15 years, and a nominal growth in GDP of 4.0% after this date in a 2-stage model produces an expected market return of 7.28% (See OUCC Attachment SD-2, "2-stage DCF for Market Return" tab. This result is still higher than the average of the dozen entities who provided a long-term return on equity forecast that I utilized, which averaged 7.02%.

Ms. Bulkley's use of an estimated required market return of the S&P 500 of 12.50% is the single largest driver of the differences between her CAPM results and those of my own.

Q: Please summarize your disagreements with Ms. Bulkley's CAPM analyses.

A: Ms. Bulkley's CAPM analyses produce estimated costs of equity of 10.19% (Long-Term average Beta, and 30-day average of the 30-Year Treasury yield) to 10.88% (the Current Value Line Beta and the Longer Term Forecasted 30-year Treasury yield). As previously discussed in my testimony, my primary concern with Ms. Bulkley's CAPM analyses is her use of an estimated market return of 12.50%, which results in her subsequent risk premiums of 8.60%-8.79% (Attachment AEB-4).

6. Conclusions on CAPM analyses

Q: Please summarize the results of your CAPM analyses.

A: The results of my CAPM analyses are depicted on OUCC Attachment SD-2. The cost of equity based on my CAPM analyses using my preferred inputs of the 7-day average of 30-year treasury yields as the risk-free rate, the Forecasted ERP, and the mean Beta from all 6 sources results is 7.39%. The results would have been significantly lower had I utilized the equity risk premium generated by using the average of market forecasters of 7.02% less the risk-free rate of 3.89%, which result in an ROE of 5.91%. The results of my analyses use a forecasted risk premium is 5.42%.

XII. APPENDIX H

Inflation

Q: Have you incorporated inflation projections as an input in any of your models?

A: Yes. Most of the estimates are implied, but there are various places where the estimates and forecasts are explicit. This portion of my testimony is meant to highlight some specific forecasts that were either provided by the Petitioner or that I am utilizing within my models.

Q: Where would projected inflation be implied within your projections and models?

A: The most obvious place is as a component of interest rates. For instance, a 10-year Treasury yield implicitly includes the markets estimates of inflation over the next ten years. There are readily available interest rates without this component, specifically a security called a TIPS (Treasury Inflation-Protected Securities). A standard 10-year Treasury yield would be considered a nominal interest rate, as opposed to a real rate (which is a nominal rate of interest less the inflation rate). Since interest rates indirectly affect stock prices changes in implied inflation forecasts also affect stock prices. General inflation may also affect equities more directly, if inflation impacts are uneven, or as equities respond to the depreciation of the currency in which they are denominated.[74]

Q: Are explicit inflation projections available?

A: Yes. There are long-term inflation forecasts provided by the Federal Reserve and the Congressional Budget Office. There are inflation estimates included with the projections

[74] This is just another definition of inflation, that inflation instead of measuring the increase in prices measures the decrease in value of the currency in which those prices are being measured. They are two sides of the same coin.

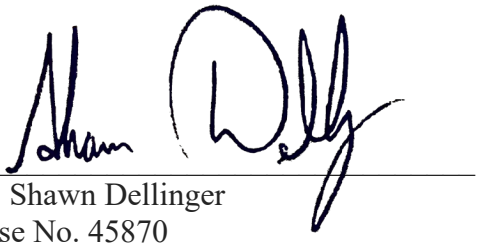
that INPRS uses as part of their market return estimates. There are multiple other sources from companies to surveys of professional forecasters. Please find (14) separate projections for long-term inflation assumptions below. I believe these are all nationally recognized, well-respected sources.

Table SD-16

Source:	Forecast	Notes
Blue Chip	2.20%	CPI Consensus, 2030-2034
BNY Mellon	2.90%	10 Year Annualized, p. 12
Congressional Budget Office	2.30%	Growth of CPI-U, Average of Growth from 2023-2052
Congressional Budget Office	2.00%	Long-Run Inflation trendline
Federal Reserve	2.00%	Longer run
Fidelity	2.50%	Page 5, 20 Year Assumptions
Horizon Actuarial Services	2.44%	Inflation-All Survey Respondents, page 4
INPRS	2.00%	30-Year inflation assumption, page 67
JP Morgan	2.60%	US Inflation, page 112
Philadelphia Fed	2.36%	Long-Term Average 2023-2032, Headline CPI Q2 Survey of Professional Forecasters
Schwab	2.50%	Annualized Forecasted (2023-2032)
Vanguard	2.50%	Midpoint of range of 2.0%-3.0%, 10 year average forecast, page
Verus	2.50%	10-Year Inflation Forecast, page 10
Verus	2.10%	30-Year Inflation Assumption, page 37
Average	2.35%	

AFFIRMATION

I affirm the representations I made in the foregoing testimony are true to the best of my knowledge, information, and belief.



By: Shawn Dellinger
Cause No. 45870
Office of Utility Consumer Counselor (OUCC)

Date: July 21, 2023

Value Line

Industry Analysis
Amer. Water WorksNYSE: AWK

Water UtilityRank: 66

Industry: WATER UTILITY INDUSTRYPubdate: July 7, 2023Page Number: 1780{/STORY;water} {industry}The Water Utility Industry consists of six investor-owned companies that provide water services to residential, commercial, and industrial customers. It is a niche sector because most of the water utilities in the United States are run by states and local governments that do not issue stock.This Industry has typically attracted investors willing to pay a premium in return for well-defined earnings and dividends.The Industry doesn't carry a favorable ranking.Niche SectorA couple of factors that set the Water Utility Industry apart is how small the Industry is and the limited number of selections available to investors. The six companies have a combined market capitalization of just $47.4 billion. The breakdown is: American Water Works, ($27.3 billion); Essential Utilities, ($10.6 billion); American States Water, ($3.1 billion); California Water, ($2.8 billion; SJW Group, ($2.2 billion); and Middlesex Water, ($1.4 billion). Getting more granular, the group only has two large-cap stocks, three mid-caps, and one small cap. In addition, the two biggest companies account for 80% of the industry total, (American Water Works, (58%) and Essential, (22%). For institutional investors to get involved with these equities, their options are limited. Fund managers often do not want to own more than 5% of any one company. Therefore, the mid- and small-cap utilities can be difficult to place in a portfolio, as a stake of over $155 million in the four smallest equities would cross this threshold. (It should be noted that the largest money managers such as BlackRock and Vanguard often surpass the 5% mark, but the shares they buy are often spread over several dozens different mutual funds.)High ValuationsOne of the reasons we discussed the size of the Water Utility Industry at length is because we think that there is more demand for shares of these companies than supply. The result has been, in our opinion, that these equities trade at too-high a price-to-earnings ratio. Five of the six stocks have current P/Es that range from 25.2 to 33.0. (Essential has a 25.2 P/E ratio, but that's because half of its operations involve natural gas.) We don't disagree with the many analysts who find much to like with these companies, our different outlook is based solely on price. It must be kept in mind that all of these companies main operations have their profit potential capped by state regulators.Water utilities score very high for Earnings Predictability. The companies open their financials to the regulatory commissions and seek a return on the investment they make. To date, this is one of the really bright spots in this space. All of these utilities are involved in large construction programs to replace America's aging water infrastructure. Fortunately, the companies' managements and regulators have been on the same page. Hence, regulatory risk has not been much of a factor here. This isn't always the case. Indeed, state commissions are often involved in fierce battles with electric and gas utilities over what these entities can charge customers. In any case, in the next few years, based on our assumption of continued good relations with regulators, we think the group's annual earnings growth will be somewhere around 4% to 9%.FundamentalsIn our Water Industry reports, we highlight how the average age of pipelines in many water districts in the U.S. is between 50 to 80 years old. Many of these assets should have been replaced a long time ago, but they were not because both the regulators and water companies were satisfied charging too small a fee for water service. This lead to underinvestment in upgrading antiquated assets. About a decade ago, the two got together and realized that greater amounts had to be spent to modernize these assets. This has meant higher bills for customers, but a gradually improved water system that still has a long way to go.To obtain the funds needed to update water systems, these companies have turned mostly to the bond markets. As a result, the balance sheets in the group can best be classified as average.Mergers And AcquisitionsA very high percentage of the water utilities in the United States are municipally run. They are not-for-profit governmental agencies. Most are small, inefficient, and don't have the capital required to modernize their facilities. American Water Works and Essential have seized on this opportunity to buy many of the smaller

water districts. Both firms are able to absorb these purchases and wring substantial savings from the acquired assets. We expect this bolt-on acquisition strategy to continue to be a solid growth catalyst for the foreseeable future.A couple of the stocks in this space are ranked to outperform the broader market averages in the year ahead. Also, a few offer attractive appreciation for the 18-month period. Longer-term, the pickings here are even slimmer. Just about every water equity has poor total return potential out to 2026-2028.

- Compare Companies
- List of Companies

Trailing twelve months

Explain

Name	Safety™	Timeliness™
Consolidated W…	--	--
SJW Group	3	1
Artesian Resou…	--	--
American State…	2	2
California Wat…	3	5
York Water Com…	--	--
American Water…	3	3
Essential Util…	3	3
Middlesex Wate…	2	5
Global Water R…	--	--

PANEL2of10

OUCC ATTACHMENT SD-2

ARE FILED AS EXCEL DOCUMENTS

KROLL

Kroll Lowers Its Recommended U.S. Equity Risk Premium to 5.5%

Executive Summary

Kroll regularly reviews fluctuations in global economic and financial market conditions that may warrant changes to our equity risk premium (ERP) and accompanying risk-free rate recommendations. The risk-free rate and ERP are key inputs used to calculate the cost of equity capital in the context of the Capital Asset Pricing Model (CAPM) and other models used to develop discount rates. We also update country risk data on a quarterly basis for 175+ countries using various models.

The Kroll Recommended U.S. ERP is decreasing from 6.0% to 5.5% when developing USD-denominated discount rates as of June 8, 2023 and thereafter, until further notice. The Kroll Recommended Eurozone ERP is being reaffirmed in the *range* of 5.5% to 6.0% until further notice.

Background

According to our last update "Impact of High Inflation and Market Volatility on Cost of Capital Assumptions" (dated October 18, 2022), the Kroll Recommended U.S. ERP was *increased* to 6.0% (from 5.5%) when developing USD-denominated discount rates as of October 18, 2022 and thereafter, until further guidance was issued.

In March 2023, we *reaffirmed* our 6.0% U.S. ERP guidance, largely due to the emerging banking crisis that led to a number of banks declaring bankruptcy or being bailed out (through acquisitions).

More recently, we observed that the factors we monitor suggested (on the whole) that equity risks *had diminished* relative to our previous March 2023 analysis, but the stalemate in the U.S. debt ceiling negotiations was the factor preventing us from lowering the recommendation to 5.5%. In early May, U.S. Treasury Secretary Janet Yellen warned that the country could breach the debt ceiling as early as June 1 (later changed to June 5), which could have led to the first-ever debt default by the United States.

The stalemate over the debt ceiling has been resolved with the passage of the "Fiscal Responsibility Act of 2023" (signed into law by the U.S. President on June 3). In addition, the factors we normally monitor continue to suggest that equity risks have diminished relative to when we issued our October 2022 guidance, as well as relative to the turmoil observed during the March 2023 banking crisis:

- The Federal Reserve (Fed) hinted at a *pause* of its recent interest-rate hiking cycle, taking a wait-and-see approach. Although some Fed officials still think that additional rate hikes could be in the cards, this pause has removed some of the uncertainty from financial markets.

- At the end of May 2023, the S&P 500 index was *up* about 17% from its October 12, 2022 local low (in price terms). The NASDAQ index, a barometer of the tech sector, was *up* by 27% since its December 28, 2022 local low. The S&P 500 and NASDAQ improvements since the beginning of this year do not compensate for their overall 2022 losses of 19% and 33%, respectively. However, it does reflect the fact that markets have generally been more optimistic in 2023.

- The VIX (the volatility index on the S&P 500), known informally as the "fear index", has generally been around or *below* its long-term average of approximately 20 since the beginning of the year (except during the March banking crisis, when it reached a local high of 26.5 on March 13).

- U.S. corporate credit spreads (i.e., the difference between yields of speculative-grade bonds and investment-grade bonds) are still *low* on a historical basis, even though the underlying corporate yields have increased significantly since early 2022. Similar to the VIX, corporate credit spreads are generally considered a barometer of investors' "fear".

- Forward-looking ERP models have been *lower* relative to their September/October 2022 highs when we last increased our U.S. ERP recommendation to 6.0%.

- While there is a chance the U.S. economy will tip into recession later in 2023 or in early 2024, many economists do *not* expect it to be a deep or prolonged one.

- While the U.S. unemployment rate increased to from 3.4% in April to 3.7% in May, this is still very low by historical standards. The labor market is still tight and unemployment rate projections are relatively tame when compared to past recessionary periods.

- Inflation, as measured by the Consumer Price Index (CPI), is still far above the Fed's 2.0% target, but it seems to be on a steady downward path. In the 12 months ending in April 2023, CPI inflation (before seasonal adjustments) increased 4.9%, down from its 41-year high of 9.1% for the 12 month-period ending June 2022. Nevertheless, risks do remain. The Fed's preferred gauge for inflation, the Personal Consumer Expenditures (PCE) Price Index has actually accelerated in April to 4.4%. Likewise, the core PCE index (i.e., excluding food and energy) accelerated to 4.7% in April, demonstrating the challenge the Fed is facing in bringing down inflation.

- For now, the world economy appears to have avoided the worst-case scenarios from the Russia-Ukraine war.

  Meanwhile, a period of "stagflation"—where the economy experiences sluggish or no growth—accompanied by high inflation is still a realistic scenario for some economies within the eurozone. For example, according to recent data, Germany—Europe's largest economy—entered a technical recession in Q1 2023, after two consecutive quarters of negative real economic growth. There was some optimism in early 2023 that a contraction could be avoided, as an unseasonably warm winter in Europe contributed to lower energy prices. However, high prices continued to erode German consumer purchasing power.

Inflation in Germany remained at an elevated level of 6.3% (estimated) in May and is expected to remain a key challenge for the rest of the year.

In the broader eurozone, inflation has been slowly coming down from 25-year highs, standing at an estimated 6.1% at the end of May. However, core inflation (excluding volatile energy and food prices) remained stubbornly high at an estimated 5.3%, and far from the European Central Bank's (ECB) 2.0% inflation target. The ECB slowed down the pace of interest rate hikes at its May 2023 meeting, but signaled more tightening is still coming. The revision in Germany's real GDP growth for Q1 2023 helped tip the eurozone economy into a technical recession, after also having contracted in Q4 2022. This will make ECB's job in 2023 even more challenging.

Cost of Capital Recommendations

- **United States:** With the aforementioned factors suggesting that equity risks in the U.S. *have diminished*, and the immediate risks associated with the debt ceiling debate resolved with the passage of the "Fiscal Responsibility Act of 2023", **Kroll is lowering its Recommended U.S. ERP from 6.0% to 5.5% when developing USD-denominated discount rates as of June 8, 2023 and thereafter, until further notice.** This is matched with the *higher* of a normalized risk-free rate of 3.5% or the spot 20-year U.S. Treasury yield as of the valuation date.

- **Eurozone (from a German investor perspective)**: The current Kroll Recommended Eurozone ERP remains in the *range* of 5.5% to 6.0%. Based on current economic and financial market conditions, we continue to believe that an ERP towards the higher end of the range (i.e., 6.0%), used in conjunction with a German normalized risk-free rate of 3.0%, is more appropriate when developing EUR-denominated discount rates as of June 8, 2023 and thereafter, until further guidance is issued.

  Incremental country risk adjustments for other eurozone countries with a sovereign debt rating below AAA may be appropriate. Please note that this information does not supersede Germany's IDW (Institut der Wirtschaftsprüfer) guidance for projects that will be reviewed by German auditors or regulators.

  However, we are monitoring markets and the geo-political and economic environment closely to determine whether indications point to an ERP closer to the lower end of our recommended range.

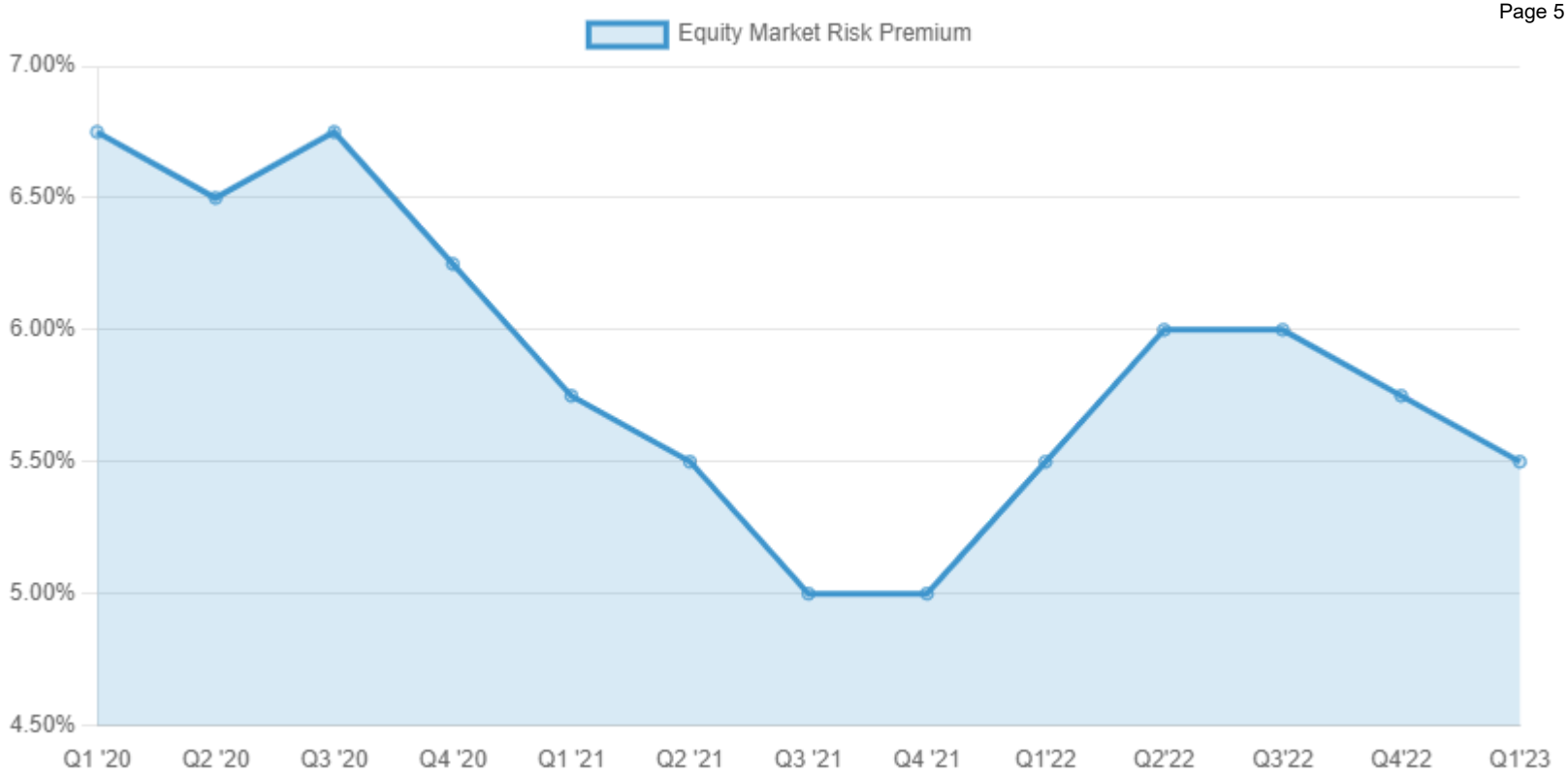
We will continue to closely monitor the situation and publish new guidance when appropriate.

Please contact our support team with any questions: costofcapital.support@kroll.com

Equity Market Risk Premium – Research Summary

KPMG Corporate Finance NL recommends an MRP of 5.5% as per 31 March 2023

We recommend the use of an equity market risk premium ("MRP") of 5.5% as per 31 March 2023. During the first quarter of 2023, we have observed an increase in stock prices, a slight decrease in risk-free rates and overall a slightly more positive economic outlook. As a result of these developments, we decrease our MRP to 5.5%; a decrease of 25 basis points compared to the MRP as per 31 December 2022.



To download the full Equity Market Risk Premium report in pdf format, please click the icon below.

Note: Other KPMG country practices may have a deviating view on the MRP, as it is dependent on other parameters of the cost of capital determination, which may differ from country to country. In addition, commonly applied local market practice or regulatory requirements may also lead to different conclusions on individual parameters such as the MRP

Introduction - Valuation and Discount Rates

Introduction

The discount rate is an important input parameter to any valuation based on the discounted cash flow methodology (“DCF”). All else equal, a higher discount rate will lead to a lower asset value and vice versa.

This discount rate can either be directly applied to equity cash flow forecasts of a company or it can be used in conjunction with the cost of debt and a certain financing structure to derive the weighted average cost of capital (“WACC”). Hereafter, we specifically focus on the derivation of the cost of equity for company valuations.

A general DCF model can be expressed by the following formula:

$$\text{Present value} = \frac{CF_1}{(1+k)^1} + \frac{CF_2}{(1+k)^2} + \frac{CF_3}{(1+k)^3} + \cdots = \sum_{t=1}^{\infty} \frac{CF_t}{(1+k)^t}$$

$$\text{Present value} = \text{value of the analysed asset (e.g. a company)}$$

$$CF_t = \text{cash flow that the asset will generate in period t}$$

$$\text{k} = \text{asset-specific discount rate}$$

Discount rate derivation

While there are several ways to derive discount rates, the most commonly applied methodology is the ‘build-up methodology’ based on the Capital Asset Pricing Model (“CAPM”). This methodology builds up the discount rate by summation of several asset-related risk components in order to derive a return at which investors are willing to invest in this asset (e.g. a company).

The build-up of the cost of equity ("k") of a company can be expressed as:

$$\mathbf{k = rfr + \beta x\ MRP + \alpha}$$

$$\begin{aligned} k &= \text{required return on equity} \\ rfr &= \text{risk-free rate} \\ \beta &= \text{a company's systematic risk} \\ MRP &= \text{market or equity risk premium} \\ \alpha &= \text{asset-specific risk factors} \end{aligned}$$

The function and derivation of the individual discount rate parameters are briefly discussed in the following section.

Introduction - Discount Rate Parameters

Risk-free rate

The risk-free rate forms the basis for any discount rate estimation using the build-up methodology. As the name implies, this rate should not take into account any risk factors and should only include two general components:

- The time value of money; and
- Inflation.

Since there are no investments that are truly risk-free, the risk-free rate is commonly approximated by reference to the yield on long-term debt instruments issued by presumably financially healthy governments (e.g. AAA-rated government bonds with a maturity of 30 years).

Beta

Beta measures a stock's volatility in relation to the relevant market benchmark.

A beta greater/smaller than 1.0 means that the share price of a company is more/less volatile than the general market and therefore investors will require a higher/lower return to compensate for this volatility.

Alpha

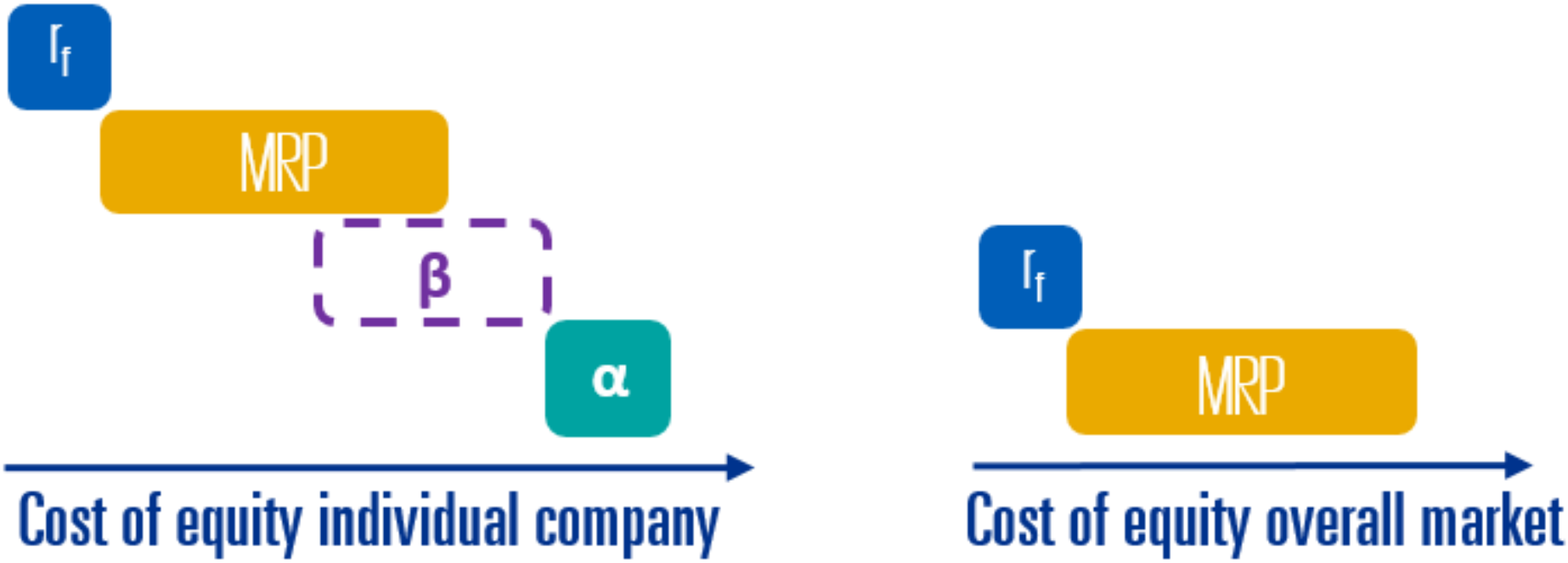
Alpha is an asset-specific adjustment factor representing unsystematic risk not already being captured by way of the beta. If a financial forecast does not account for certain operational risks, it may be appropriate to include a forecast risk premium. Other examples of alpha adjustments are size premia and illiquidity premia.

Equity market risk premium

The MRP is the average return that investors require over the risk-free rate for accepting the higher variability in returns that are common for equity investments (i.e. the MRP reflects a minimum threshold on top of the risk-free rate for investors in order to be willing to invest).

Since alpha only relates to unsystematic adjustments, it can be omitted if considering the overall market (alpha = 0). Furthermore, it is important to note that for the overall market, beta will by definition always be 1.0, since the sum of all returns of individual stocks equals the overall return of the market, and therefore, the two are perfectly correlated.

As the figure below shows, the required return for the overall market is defined entirely by the risk-free rate and the MRP.



Measurement of the equity market risk premium methodologies

Implied equity market risk premium

The general DCF formula discussed earlier can be used to solve for the implied discount rate that reconciles these parameters.

Deducting the risk-free rate from this implied discount rate will yield an implied MRP.

The implied MRP methodology is to some extent sensitive to input assumptions and careful consideration must be given to:

- The selection of income proxies (e.g. dividends, buy-backs, cash flow);
- The basis of expected growth rates (e.g. macroeconomic considerations, analyst forecasts); and
- The trade-off between outcome stability and current relevance with regards to certain historical inputs (e.g. dividend yield normalisations, pay-out ratios);

KPMG Corporate Finance & Valuations in the Netherlands, a division of KPMG Advisory N.V. ("KPMG Corporate Finance NL"), continuously inspects if enhancements in applying the above input assumptions are necessary for the current MRP method in order to accurately reflect the current market dynamics.

We deem the implied MRP methodology the most appropriate methodology in order to derive changes in the MRP as a result of economic developments, because it incorporates recent market developments, expectations, and it can be logically deduced from observable market data.

Historical observation methodology

This methodology assumes that the expected MRP can be derived by studying historical equity returns.

While this methodology is well established and theoretically sound, it does not allow for the incorporation of the most recent market developments.

Other methodologies

There are a number of other prominent methodologies which may lead to additional insights, the most common being:

- The multi-factor model;
- The yield spread build-up; and
- The survey approach.

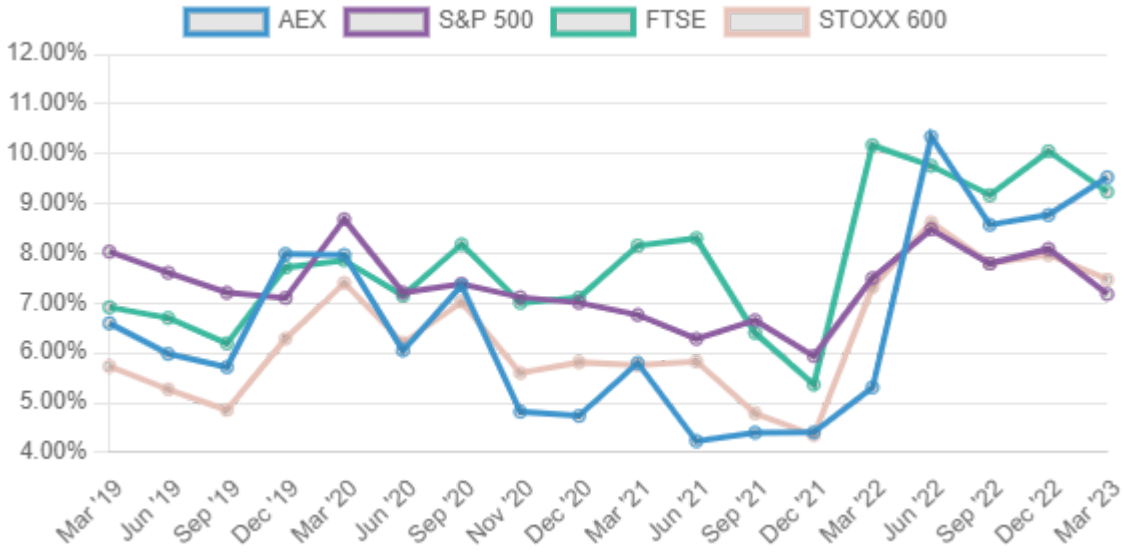
While each of these methodologies offer some unique advantages, the application of these methodologies involves similar trade-offs as the ones between the historical and the implied MRP methodology.

Development of Discount Rates

Implied equity return

The graph below illustrates the movement in the implied equity returns for a number of major equity markets over time.

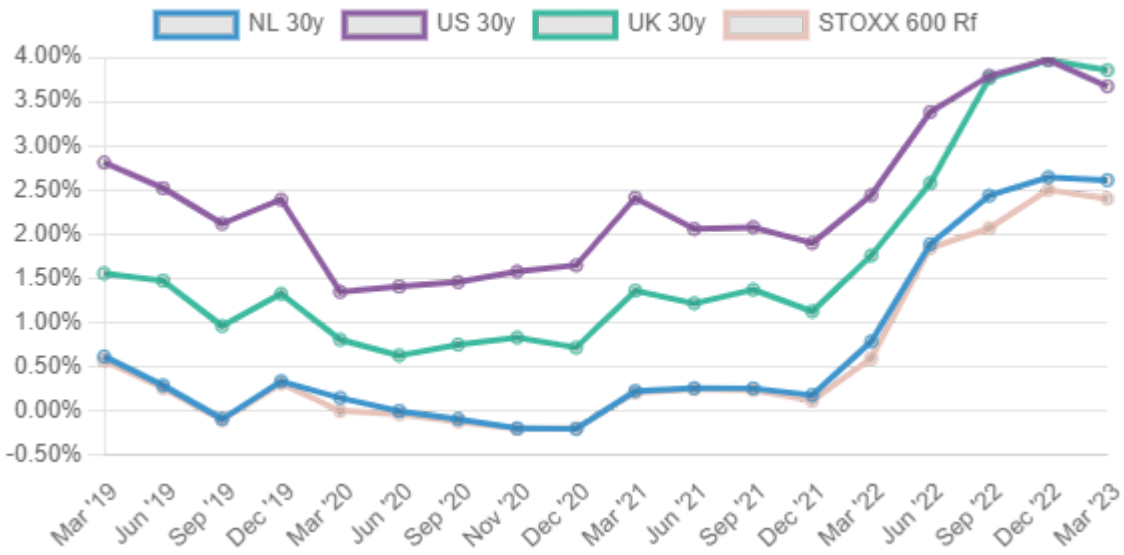
From this graph it can be observed that the implied equity returns of the markets included (apart from the AEX) have experienced a decrease in the first quarter of 2023.



Yield on long-term bonds

In the graph below, the interest rate movements for a number of highly developed markets (Netherlands, UK, Europe and US) are displayed.

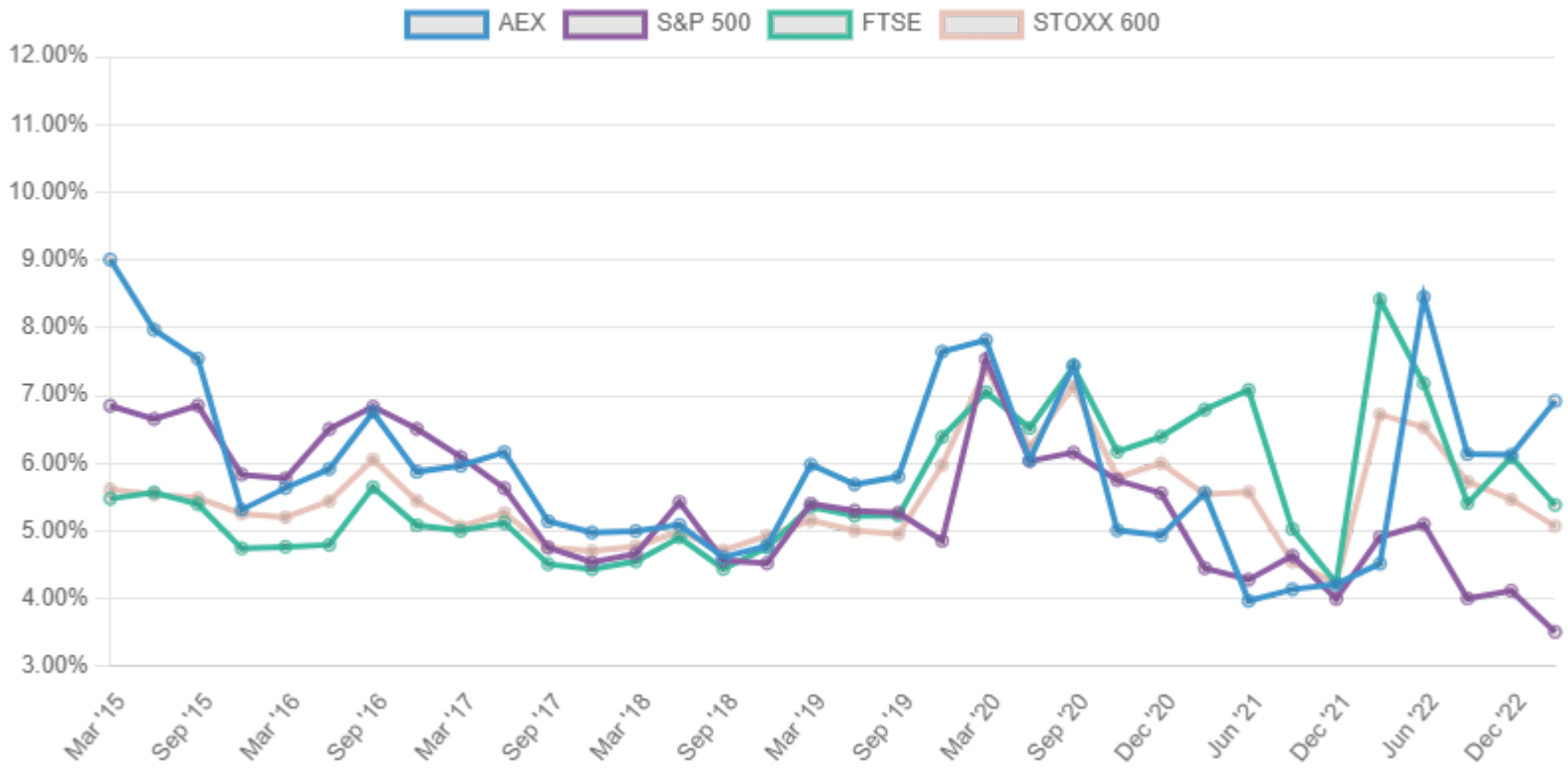
From this graph it can be observed that for the selected highly developed markets the relevant long term yields have all decreased compared to 31 December 2022.



Equity market risk premium as per 31 March 2023: 5.5%

Findings

In our current quarterly update we observe that, whilst a slight decrease in the risk-free rates were noted, an even greater reduction in implied equity returns result in a lower MRP. Compared to the previous quarter, we have decreased our MRP estimation by 25 basis points.



Equity market risk premium KPMG Corporate Finance NL

Based on the analyses set out in this report we conclude that the markets included in our study (with more weight given to the S&P 500, FTSE and STOXX 600), show lower implied premiums compared to 31 December 2022. Therefore, KPMG Corporate Finance NL recommends the use of an MRP

of 5.5% as per 31 March 2023.

We note that our estimation is based on information available as at 31 March 2023. Developments in the market after 31 March 2023 are not reflected in the MRP estimate as at 31 March 2023. However, due to the high volatility currently observed in the market, we will monitor the MRP at the end of each month and update it accordingly should any significant changes occur.

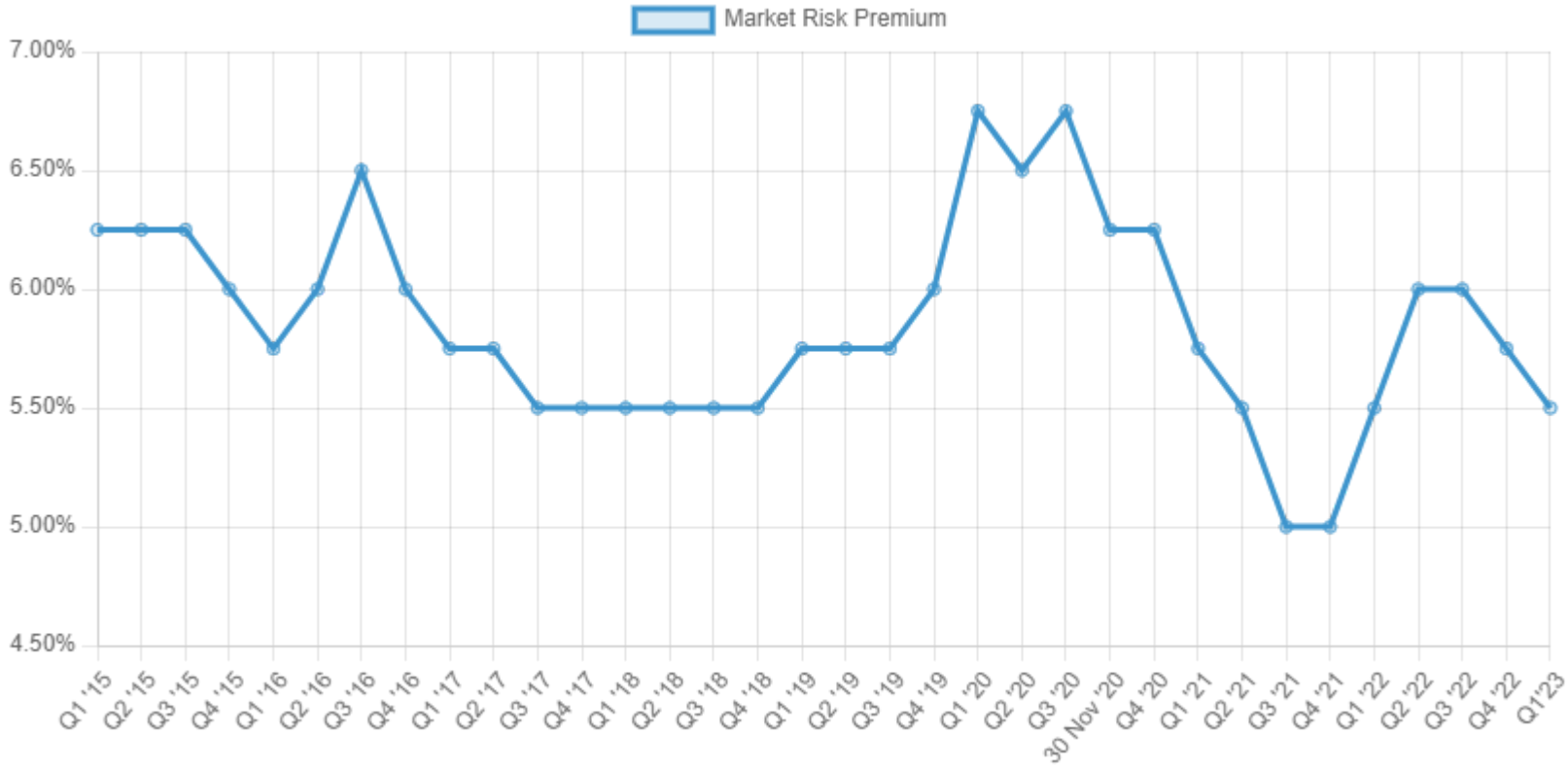
Considerations

In order to assess the reasonableness of the outcomes of our implied MRP study, we have considered various other methodologies as previously described. To the extent that these methodologies are valid to derive insights about the current level of the MRP, these methodologies have confirmed our findings.

Based on our research and professional judgement we propose a global MRP. However, when calculating a discount rate consideration must be given to (amongst others):

- The basis for the applied risk-free rate;
- The applicable country risk premium; and
- Expected differences in inflationary outlook.

We highlight that the individual input parameters used in the determination of the discount rate should never be viewed in isolation.



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Condensed Sheet for ERP from Professor Damodoran, https://pages.stern.nyu.edu/~adamodar/

Start of month	S&P 500	T.Bond Rate	Expected growth rate	ERP (T12 m with sustainable payout)	ERP (T12m)
1-Jan-23	3840	3.88%	6.41%	5.11%	5.94%
1-Feb-23	4077	3.52%	5.92%	4.89%	5.54%
1-Mar-23	3970	3.92%	5.74%	4.78%	5.58%
1-Apr-23	4109	3.47%	5.73%	4.88%	5.44%
1-May-23	4169	3.42%	5.42%	4.77%	5.30%
1-Jun-23	4180	3.64%	5.43%	4.65%	5.25%
1-Jul-23	4450	3.81%	7.08%	4.59%	5.00%

OUCC ATTACHMENT SD-4

ARE FILED AS EXCEL DOCUMENTS

AMERICAN WATER

Investor Presentation

June 2023

2023 EPS Guidance and Long-Term Targets Affirmed

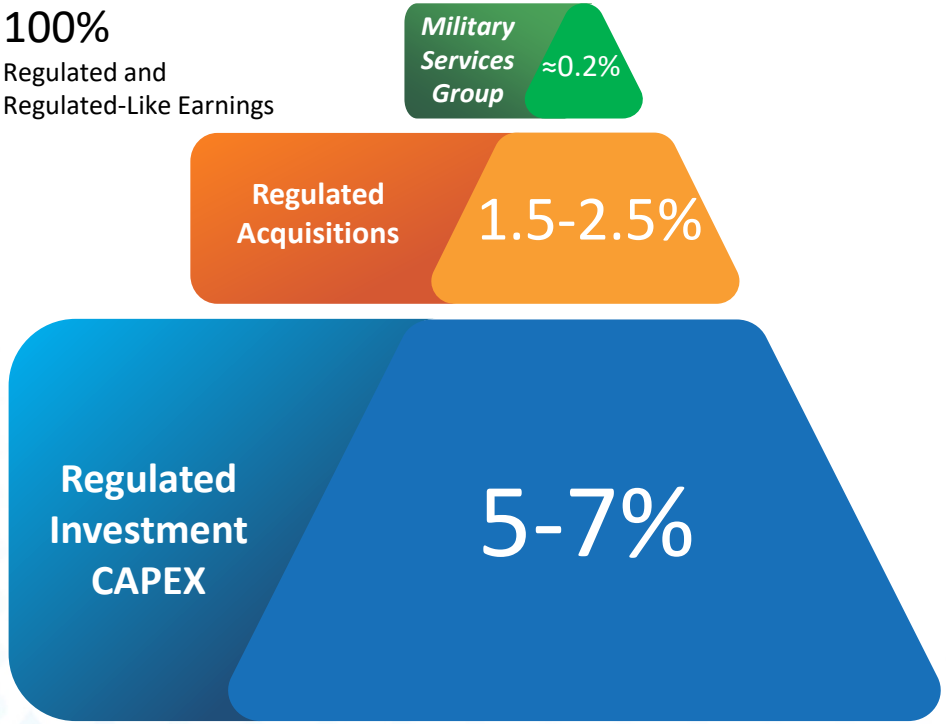
AMERICAN WATER

AWK EPS Growth Triangle

7-9% EPS CAGR Target

Business Mix

100%
Regulated and
Regulated-Like Earnings



2023 EPS Guidance

- Affirming 2023 EPS Guidance Range of $4.72 to $4.82
  - Higher revenues from investments in rate base and acquisitions drive EPS growth
  - Successful equity issuance in March

Long-Term Financial Targets

- Attractive, Long-Term Sustainable Shareholder Returns
  - EPS Growth 7-9%
  - Dividend Growth 7-9%
  - ESG Leadership Premium +
  - Customer Affordability +
- Rate Base Growth 8-9%
- Dividend Payout Ratio 55-60%
- Debt to Capital <60%

OUCC 13-003

DATA INFORMATION REQUEST
Indiana-American Water Company
Cause No. 45870

Information Requested:

Please state the dates and amounts (in value and number of shares) of each American Water Company common stock issuance during the period 2000 through 2023.

Objections:

Petitioner objects to the Request on the grounds and to the extent it is overly broad and unduly burdensome insofar as it seeks information for an unduly long period of time and which Petitioner does not maintain in its records.

Information Provided:

Subject to and without waiver of the foregoing objections, Petitioner responds as follows:

Date	Shares Issued	Price to Public	Gross Proceeds	Discount	Issuance Costs	Net Proceeds
6/10/2009	14,500,000	17.25	250,125,000	7,503,750	1,000,000	241,621,250
4/11/2018	2,320,000	80.50	186,760,000	2,644,800	529,000	183,586,200
3/03/2023	12,650,000	135.50	1,714,075,000	25,711,125	675,249	1,687,688,626

OUCC 13-009

DATA INFORMATION REQUEST
Indiana-American Water Company
Cause No. 45870

Information Requested:

Does Ms. Bulkley propose that the 4-basis point flotation cost apply to all of Petitioner's equity or only the portion of its equity funded by American Water Company common stock issuances? Please explain.

Information Provided:

Please refer to Ms. Bulkley's testimony on page 47. Ms. Bulkley's final results did not include an adjustment for flotation cost recovery. Ms. Bulkley estimated the effect of flotation cost and considered this cost in identifying an ROE from within the range of estimates from the various models.

OUCC 20-012

DATA INFORMATION REQUEST
Indiana-American Water Company
Cause No. 45870

Information Requested:

Reference the following Water Use and Efficiency Goal of American Water from the 2021 Investor Day presentation on February 25, 2021:

> *a. By 2035, American Water commits to meet customer needs while saving 15% in water delivered per customer compared to a 2015 baseline.*

Please answer and provide the following:

a. Definition of water delivered per customer.
b. Does customer refer to all customers or only to residential customers?
c. Does the same 15% goal for water savings apply to Indiana American's operations?
d. If so, please provide the 2015 baseline water delivered per customer value and show the baseline value calculation. Please include all data and assumptions relied on for the calculation in Excel format with all cells unlocked and formulas intact.
e. Does Indiana American have different water savings goals for each district and system or is the 15% savings goal to be applied companywide equally?
f. Petitioner's calculated water delivered per customer for each year from 2016 to 2022. Please show all calculations, data and assumptions in Excel format with all cells unlocked and formulas intact.
g. Targeted 2035 water delivered per customer value for American Water and for Indiana American.
h. Identify the current programs that will continue and be expanded by Indiana American to further the corporate goal of achieving a 15% water savings by 2035.
i. Identify what innovation and new technology will be deployed by Indiana American to further the corporate goal of achieving a 15% water savings by 2035.

Information Provided:

a. Water delivered per customer = system delivery / total number of customers.
b. Customer refers to total customers in all classes
c. The 15% goal is a composite goal across all American Water regulated operations. Indiana American operations will support this composite goal and will design programs to achieve a target of ~15%. The actual water efficiency savings may vary by state and district. Indiana American will be developing more detailed target goals over the next few years.
d. The 2015 baseline water delivered per customer value across American Water regulated operations was 141 KGals/customer. This value is an average of 2014 and 2015 system delivery and customers. The total system delivery ($21 billion gallons) was divided by the number of total customers (2.978 million).

e. At this point in time, the high-level goal of 15% applies to each district. A detailed assessment of water efficiency savings opportunity by district has not been completed to date. This work is anticipated to be a multi-year effort toward the 2035 goal, especially as leak detection technology advances over time. Additional information can be found in the 2022 ESG Data Summary. https://s26.q4cdn.com/750150140/files/doc_downloads/esg_docs/AWK-ESG-Data-Summary.pdf
And the Water Efficiency One-Pager
https://s26.q4cdn.com/750150140/files/doc_downloads/2021/02/Water-Efficiency-One-Pager.pdf

f. See table 1.

Table 1. System Delivery per Customer across American Water Regulated Operations since 2015

Year	SD/Cust (kGal/Cust)
2015	141
2016	140
2017	139
2018	138
2019	137
2020	136
2021	135

g. The 2035 target *System Delivery per Customer* across American Water regulated operations is 120 KGallons/Customer. A target for Indiana American has not been developed to date.

h. See American Water's One Pager on Water Efficiency
https://s26.q4cdn.com/750150140/files/doc_downloads/2021/02/Water-Efficiency-One-Pager.pdf

Indiana American believes that national trends related to more efficiency fixtures and appliances will continue and will contribute to the reduction in overall water delivery per customer. In addition, the Company's 10 year capital expenditure plan is expected to help American Water achieve its Water Use & Efficiency goal through pipe replacement and other necessary infrastructure investment.

i.

Action Plan Areas	Proposed Action(s)	Deployment Timeframe
Complete annual AWWA Water Audits.	Next audit due to the IFA is August 2023	Active
	Analyze meter orders such as estimated reads, zero's and inactive with consumption, reduce to less than 3 months or more on every meter	Active
	Monitor apparent losses (fire usage, flushing etc.)	Active
	Meters are tested yearly	Active

Test and Calibrate and Rebuild or Replace production meters in accordance with the Production Meter Practice.	Large meters at SFR & Industrial need to be evaluated yearly	Short-term (< 1 year)
	Evaluate the need to have point of entry meters across the state at all locations	Medium-term (1 - 5 years)
AMI deployment	AMI is being deployed through LOS at this time.	Active
Pressure zone management (water balances, leakage ID)	Fire Service Investigations will be taking place on an ongoing schedule	Medium-term (1 - 5 years)
	Bulk water stations installed to deter permitting non-employees from using fire hydrants for bulk water uses	Active
	Investigate areas where we can add pressure zones into our systems – NRW reduction	Short-term (< 1 year)
Proactive leak detection (e.g., acoustic monitoring)	Leak detection	Medium-term (1 - 5 years)
	Monitor AMI data for proactive leak detection on customers' side and work with local operations teams to reach out to the customers to fix the leak.	Short-term (< 1 year)
Incorporate large customer analyses and discussions into the Comprehensive Planning Study (CPS) process.	Asset Planning will expand current large customer analyses with the CPS to include sensitivity analyses around demand-side management	Short-term (< 1 year)
Partner with large users achieve water efficiency win-wins *(e.g. confirmation of metering accuracy, customer surveys, efficiency/conservation program)*	Major Accounts and Engineering teamwork with large users on facility water audits	Medium-term (1 - 5 years)
	Major accounts/Large users AMI endpoints installed	Active
Pilot and evaluate new programs, technologies, tools, and methodologies to assess water savings potential.	Water Sense Program Material is used to promote water conservation and efficiency	Active
	Third party contracted out to help with promotion, campaigns to customers	Active
	Water trailers used at events to promote Wise Water use	Active
Identify opportunities to "walk the talk" as an industry leader by having water efficient facilities and operations.	Evaluate areas we can recycle backwash water to strive for zero discharge in existing facilities and in future designs.	Short-term (< 1 year)
	Adjust Service line & main replacement workflows to track the amount of water used during flushing in MapCall	Short-term (< 1 year)

AMERICAN WATER

WE KEEP LIFE FLOWING™

IMPROVING WATER EFFICIENCY

Water efficiency is about using this precious resource wisely. By harnessing technology to help reduce waste and aligning regulations to drive water efficiency, water's vital benefits to society will be maximized today and for future generations.

BENEFITS OF IMPROVING WATER EFFICIENCY

- Helps preserve limited freshwater supplies
- Supports drought management
- Saves water, which saves money for our customers.
- Avoids operating costs (less water means less power and less chemical use) and can result in deferred or reduced capital costs
- Reduces our carbon footprint

OUR GOAL: Continue to meet customer needs while saving 15% in water delivered per customer by 2035 using 2015 as the baseline.

Why? Simple. It is the right thing to do for our customers, the company, and the environment. Because of this, we look to implement practices to continue to improve water efficiency across our footprint. If American Water and its customers work together to successfully drive water efficiency, we can help foster sustainable communities to support economic growth and resiliency.

STRATEGIES FOR IMPROVING WATER EFFICIENCY

CUSTOMER AND UTILITY PROGRAMS

Water efficiency devices and technology

Customer efficiency and public education programs

Water efficiency audits

Customer assistance programs

Ratemaking structures that support more efficient water use and aging infrastructure replacement

Water loss management

Infrastructure renewal

BUILDING BLOCKS FOR SUCCESS

From 2015 through 2020, we've achieved a 5% reduction in water delivered per customer. To reach our 15% goal, we have to succeed in three key workstreams:

Continue to Promote National Trends in End Use Water Efficiency	Continue/Expand Current Water Efficiency Programs	Innovation and New Technology
• Support industry development of and incentives for more efficient water fixtures and appliances • Support customer replacement of older and less efficient appliances	• Water loss management • Customer education • End user efficiency programs • Revenue stabilization mechanisms (RSM)*	• Leak detection • Smart irrigation • Advanced metering • Real-time insights into customer water usage data

*Implementing RSMs requires regulatory approval. This alternative regulatory mechanism helps remove the disincentive to promote water efficiency and supports earnings that permit continued water infrastructure resiliency and efficiency investments.

OUCC ATTACHMENT SD-9

ARE FILED AS EXCEL DOCUMENTS

OUCC 01-017

DATA INFORMATION REQUEST
Indiana-American Water Company
Cause No. 45870

Information Requested:

For the portion of Petitioner's pension fund(s) that are invested in equities, what rate of return does Indiana American assume each pension fund will earn? Please explain why that rate of return was used.

Information Provided:

Indiana-American is part of the total American Water Pension Plan and does not have a separate and distinct pension plan. The expected/assumed returns for equities for the Actuarial Valuation Report for Fiscal Year Ending December 31, 2022, are listed below. The asset classes invested in equities are the Large Cap, Small Cap, and International. These projected returns are based on capital market assumptions provided by the Plan's Investment Consultant (Mercer) to American Water Company in 2023, are not necessarily indicative of current investor return requirements for these indices, nor for any particular company within any of the indices. Please refer to OUCC 01-017_Attachment for the Capital Market Expectations for Mercer's Long-Term Capital Market Projections (ARR 20-Year Assumptions).

Equity Returns for 2022 Calendar Year	
	Pension
US Large Cap Equity	7.8%
US Small Cap Equity	9.1%
International Equities	8.7%

Attachment:
OUCC 01-017_Attachment.pdf

OUCC 01-018

DATA INFORMATION REQUEST
Indiana-American Water Company
Cause No. 45870

Information Requested:

For the portion of Petitioner's OPEB fund(s) that are invested in equities, what rate of return does Indiana American assume each OPEB fund will earn? Please explain why that rate of return was used.

Information Provided:
Indiana-American is part of the total American Water Pension Plan and does not have a separate and distinct pension plan. The expected/assumed returns for equities for the Actuarial Valuation Report for Fiscal Year Ending December 31, 2022, are listed below. The asset classes invested in equities are the Large Cap, Small Cap, and International. These projected returns are based on capital market assumptions provided by the Plan's Investment Consultant (Mercer) to American Water Company in 2023, are not necessarily indicative of current investor return requirements for these indices, nor for any particular company within any of the indices. Please refer to OUCC 01-017_Attachment for the Capital Market Expectations for Mercer's Long-Term Capital Market Projections (ARR 20-Year Assumptions).

Equity Returns for 2022 Calendar Year	
	Post-Retirement
US Large Cap Equity	7.8%
US Small Cap Equity	9.1%
International Equities	8.7%

Mean-Variance Assumptions (as of 12/31/2022)

	Mean-Variance Assumptions							Factor Scores					
	20-Yr Assumptions			Shorter Geometric Returns			Equil	Equity				T-	Infl
Asset Class	GRR	ARR	STD	3-Yr	5-Yr	10Yr	Return	Beta	Dur	Liq	Inc	Costs	Hedg
Domestic Equity													
US All Cap Equity	6.4%	7.9%	18.4%	6.2%	6.2%	6.2%	6.6%	1.00	0.0	93	1.7	30	50
US Large Cap Equity	6.3%	7.8%	18.0%	6.0%	6.0%	6.0%	6.5%	0.98	0.0	95	1.7	25	50
US Mid Cap Equity	6.6%	8.3%	19.6%	6.5%	6.5%	6.5%	6.7%	1.05	0.0	92	1.8	30	50
US Small Cap Equity	6.9%	9.1%	22.2%	6.9%	6.9%	6.9%	6.9%	1.13	0.0	90	1.6	40	50
US Micro Cap Equity	7.0%	9.5%	23.8%	6.9%	6.9%	6.9%	7.1%	1.18	0.0	85	1.4	55	50
US Small/Mid Cap Equity (Smid)	6.7%	8.6%	20.6%	6.6%	6.6%	6.6%	6.8%	1.08	0.0	91	1.7	35	50
US Defensive Equity	6.3%	7.2%	13.7%	6.2%	6.2%	6.2%	6.6%	0.74	0.0	92	2.1	30	50
International Equity													
Non-US Developed All Cap Equity Unhedged	7.2%	9.0%	20.3%	7.5%	7.5%	7.5%	6.4%	0.85	0.0	89	3.3	45	50
Non-US Developed All Cap Equity Hedged	7.2%	8.7%	18.4%	7.5%	7.5%	7.5%	6.4%	0.85	0.0	89	3.3	55	50
Non-US Developed Large Cap Equity Unhedged	7.0%	8.8%	20.1%	7.4%	7.4%	7.4%	6.3%	0.84	0.0	90	3.3	36	50
Non-US Developed Large Cap Equity Hedged	7.0%	8.5%	18.2%	7.4%	7.4%	7.4%	6.3%	0.84	0.0	90	3.3	46	50
Non-US Developed Small Cap Equity Unhedged	7.6%	9.9%	22.4%	8.0%	8.0%	8.0%	6.9%	0.92	0.0	87	3.1	55	50
Non-US Developed Small Cap Equity Hedged	7.7%	9.6%	20.7%	8.0%	8.0%	8.0%	6.9%	0.92	0.0	87	3.1	65	50
Emerging Markets Equity Unhedged	7.9%	10.9%	26.4%	8.4%	8.4%	8.4%	7.1%	1.08	0.0	83	3.4	75	50
China All Equity Unhedged	8.2%	12.0%	29.9%	8.6%	8.6%	8.6%	7.8%	1.02	0.0	83	6.7	75	50
China A-shares Equity Unhedged	7.6%	12.8%	35.6%	7.5%	7.5%	7.5%	7.8%	0.97	0.0	83	6.6	75	50
Emerging Markets Equity ex-China Unhedged	7.4%	10.7%	27.6%	7.7%	7.7%	7.7%	6.8%	1.09	0.0	83	9.3	75	50
ACWorld ex-US All Cap Equity Unhedged	7.3%	9.3%	21.0%	7.7%	7.7%	7.7%	6.5%	0.92	0.0	87.6923	3.3	85	50
ACWorld ex-US All Cap Equity Hedged	7.5%	9.0%	18.5%	7.8%	7.8%	7.8%	6.5%	0.88	0.0	88	3.3	95	50
ACWorld ex-US Large Cap Equity Unhedged	7.2%	9.2%	20.8%	7.7%	7.7%	7.7%	6.5%	0.91	0.0	88	3.4	55	50
ACWorld ex-US Large Cap Equity Hedged	7.4%	8.9%	18.4%	7.7%	7.7%	7.7%	6.5%	0.87	0.0	88	3.4	65	50
Global AC All Cap Equity Unhedged	6.7%	8.3%	18.5%	6.8%	6.8%	6.8%	6.6%	0.97	0.0	92	2.3	62	50
Global AC All Cap Equity Hedged	6.8%	8.2%	17.9%	6.8%	6.8%	6.8%	6.6%	0.95	0.0	92	2.3	72	50
Global AC Large Cap Equity Unhedged	6.7%	8.2%	18.2%	6.7%	6.7%	6.7%	6.5%	0.95	0.0	92	2.3	55	50
Global AC Large Cap Equity Hedged	6.7%	8.1%	17.6%	6.7%	6.7%	6.7%	6.5%	0.93	0.0	92	2.3	65	50
Global AC Small Cap Equity Unhedged	7.3%	9.3%	21.1%	7.5%	7.5%	7.5%	6.9%	1.05	0.0	88	2.4	75	50
Global AC Small Cap Equity Hedged	7.4%	9.2%	20.4%	7.5%	7.5%	7.5%	6.9%	1.03	0.0	88	2.4	85	50
Global Developed Large Cap Unhedged	6.5%	7.9%	17.7%	6.5%	6.5%	6.5%	6.4%	0.93	0.0	93	2.2	37.5	50
Global Developed Large Cap Hedged	6.5%	7.9%	17.5%	6.5%	6.5%	6.5%	6.4%	0.93	0.0	93	2.2	47.5	50
Global Developed Small Cap Unhedged	7.2%	9.2%	21.1%	7.3%	7.3%	7.3%	6.9%	1.04	0.0	88	2.3	55	50
Global Developed Small Cap Hedged	7.2%	9.2%	20.8%	7.3%	7.3%	7.3%	6.9%	1.04	0.0	88	2.3	65	50
Global Defensive Equity Unhedged	6.9%	7.7%	13.3%	6.5%	6.5%	6.5%	6.4%	0.71	0.0	93	2.6	37.5	50