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2023 May 12, 2:02PM
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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF FALLS WATER CO., INC. FOR AUTHORITY TO INCREASE ITS RATES AND CHARGES FOR WATER SERVICE IN THE STATE OF IDAHO	)	Case No. FLS-W-23-01

DIRECT TESTIMONY OF HAROLD WALKER, III

FOR FALLS WATER CO., INC.

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OVERALL RATE OF RETURN TERMS, ABBREVIATIONS AND ACRONYMS

Terms, Abbreviations and Acronyms	Defined
CAPM	Capital Asset Pricing Model
Commission	Idaho Public Utilities Commission
Company	Falls Water Company, Inc.
Comparable Companies	Water Group Followed by Analysts
Comparable Group	Water Group Followed by Analysts
Cost of Capital	Investor-required cost rate
DCF	Discounted Cash Flow
DPS	Dividend per share
EPA	U.S. Environmental Protection Agency's
EPS	Earnings per share
Falls Water	Falls Water Company, Inc.
Financial Risk	Leverage
GICS	Global Industry Classification System
GO	General Obligation Bonds
IOU	Investor Owned Utilities
Leverage	Fixed cost capital
Long-term U.S. Treasury Securities	Base Risk-Free Rate
M/B	Market-to-Book Ratios
Moody’s	Moody's Investors Service
NARUC	National Association of Regulatory Utility Commissioners
Non-Systematic Risk	Company-Specific Risk
PUC	Idaho Public Utilities Commission
ROE	Return on Equity
RP	Risk Premium
S&P	Standard & Poor's
SIC	Standard Industrial Classification
Systematic Risk	Non-Diversifiable Risk
Value Line	Value Line Investment Survey
Water Group	Water Group Followed by Analysts

INTRODUCTION

Q. Please state your name and business address.

A. My name is Harold Walker, III. My business address is 1010 Adams Avenue, Audubon, Pennsylvania 19403.

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

A. I am employed by Gannett Fleming Valuation and Rate Consultants, LLC as Manager, Financial Studies.

Q. What is your educational background and employment experience?

A. My educational background, business experience and qualifications are provided in Appendix A.

SCOPE OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to recommend an appropriate overall rate of return that Falls Water Co., Inc. ("Falls Water" or the "Company") should be afforded an opportunity to earn on its water service rate base. My testimony is supported by Exhibit No. 6, which is composed of 19 Schedules.

SUMMARY OF RECOMMENDATION

Q. What is your recommended cost of equity?

A. My recommendation is that Falls Water be permitted an overall rate of return of 8.12%, including an 11.00% cost of common equity, based upon the Company's hypothetical capital structure at December 31, 2022. My recommended cost of common equity reflects Falls Water's unique risk characteristics.

Q. How did you determine your recommended common equity cost rate?

A. I used several models to help me in formulating my recommended common equity cost rate including Discounted Cash Flow ("DCF"), Capital Asset Pricing Model ("CAPM") and Risk Premium ("RP").

Q. Is it important to use more than one market model?

A. Yes. It is necessary to estimate common equity cost rates using a number of different models. At any given time, a particular model may understate or overstate the cost of equity. While any single investor may rely solely upon one model, different investors rely on different models and many investors use multiple models. Therefore, because the price of common stock reflects a number of valuation models, it is appropriate to estimate the market-required common equity cost rate by applying a broad range of analytical models.

Q. Please summarize your common equity cost rate recommendation.

A. There is no market data concerning Falls Water's shares of common stock because Falls Water shares of common stock are not publicly traded. Accordingly, due to the lack of market data concerning Falls Water's equity, I used a comparable group of publicly traded companies to estimate the common equity cost rate. Based upon the results of my entire analysis, I conclude Falls Water's current common equity cost rate is at least 11.00%. The current range of common equity cost for Falls Water is 9.70% (DCF), 12.30% (CAPM), and 11.20% (RP). Value Line Investment Survey ("Value Line") is relied upon by many investors and is the only investment advisory service of which I am aware that projects earned return on equity. As a check on the reasonableness of my common equity cost rate recommendation, I

reviewed Value Line's projected returns on common equity for comparable utilities. Value Line's projected earned returns on common equity for my comparable utilities average 10.7% for the period 2025-2027. For 2021, the comparable utilities earned a return on common equity of 11.3% and earned a return on common equity of 10.5% in 2020. The range of the projected returns and actual returns suggests that my recommendation that Falls Water be permitted an opportunity to earn 11.00% is reasonable, if not conservative.

Q. What ROE is the Company requesting?

A. As stated in the testimony of Adam Rue, the Company is requesting no change to their currently authorized ROE of 10.2%.

PRINCIPLES OF RATE REGULATION AND FAIR RATE OF RETURN

Q. What are the principles guiding fair rates of return in the context of rate regulation?

A. In a capitalistic or free market system, competition determines the price for all goods and services. Utilities are permitted to operate as monopolies or near monopolies as a tradeoff for a ceiling on the price of service because: (1) the services provided by utilities are considered necessities by society; and (2) capital-intensive and long-lived facilities are necessary to provide utility service. Generally, utilities are required to serve all customers in their service territory at reasonable rates determined by regulators. As a result, regulators act as a substitute for a competitive-free market system when they authorize prices for utility service.

Although utilities operate in varying degrees as regulated monopolies, they must compete with governmental bodies, non-regulated industries, and other

utilities for labor, materials, and capital. Capital is provided by investors who seek the highest return commensurate with the perceived level of risk; the greater the perceived risk, the higher the required return rate. In order for utilities to attract the capital required to provide service, a fair rate of return should equal an investor-required, market-determined rate of return.

Q. What constitutes a fair rate of return?

A. Two noted Supreme Court cases define the benchmarks of a fair rate of return. In *Bluefield*[1], a fair rate of return is defined as: (1) equal to the return on investments in other business undertakings with the same level of risks (the comparable earnings standard); (2) sufficient to assure confidence in the financial soundness of a utility (the financial integrity standard); (3) adequate to permit a public utility to maintain and support its credit, enabling the utility to raise or attract additional capital necessary to provide reliable service (the capital attraction standard). The second case, *Hope*[2], determined a fair rate of return to be based upon guidelines found in *Bluefield* as well as stating that: (1) allowed revenues must cover capital costs including service on debt and dividends on stock; and (2) the Commission was not bound to use any single formula or combination of formulae in determining rates. Utilities are not entitled to a guaranteed return. However, the regulatory-determined price for service must allow the utility a fair opportunity to recover all costs associated with providing the service, including a fair rate of return.

[1]Bluefield Water Works & Improvement Company v. P.S.C. of West Virginia, 262 U.S. 679 (1923).

[2]Federal Power Commission v. Hope Natural Gas Company, 320 U.S. 591 (1944).

INVESTMENT RISK

Q. Previously, you referred to risk. Please define the term risk.

A. Risk is the uncertainty associated with a particular action; the greater the uncertainty of a particular outcome, the greater the risk. Investors who invest in risky assets expose themselves to investment risk particular to that investment. Investment risk is the sum of business risk and financial risk. Business risk is the risk inherent in the operations of a business. Assuming that a Company is financed with 100% common equity, business risk includes all operating factors that affect the probability of receiving expected future income such as: sales volatility, management actions, availability of product substitutes, technological obsolescence, regulation, raw materials, labor, size and growth of the market served, diversity of the customer base, economic activity of the area served, and other similar factors.

Q. What is financial risk?

A. Financial risk reflects the manner in which an enterprise is financed. Financial risk arises from the use of fixed cost capital (leverage) such as debt and/or preferred stock, because of the contractual obligations associated with the use of such capital. Because the fixed contractual obligations must be serviced before earnings are available for common stockholders, the introduction of leverage increases the potential volatility of the earnings available for common shareholders and therefore increases common shareholder risks.

Although financial risk and business risk are separate and distinct, they are interrelated. In order for a company to maintain a given level of investment risk,

business risk and financial risk should complement one another to the extent possible. For example, two firms may have similar investment risks while having different levels of business risk, if the business risk differences are compensated for by using more or less leverage (financial risk) thereby resulting in similar investment risk.

DESCRIPTION OF FALLS WATER

Q. Please give a brief description of the Company.

A. Falls Water is a private or investor-owned company. Falls Water is a regulated public utility that provides water service to about 7,000 (as of December 31, 2022) customers located in its franchise territories in Bonneville County and Jefferson County, Idaho. The price and conditions of service of Falls Water is regulated by the Idaho Public Utilities Commission ("Commission" or "PUC").

Falls Water is a wholly-owned subsidiary of NW Natural Water of Idaho, LLC. NW Natural Water of Idaho, LLC is the sole direct source of Falls Water's external equity capital. In addition to Falls Water, NW Natural Water of Idaho, LLC also owns Gem State Water Company, LLC (regulated utility) and Gem State Infrastructure, LLC (unregulated). NW Natural Water of Idaho, LLC is a wholly-owned subsidiary of NW Natural Water, LLC. NW Natural Water, LLC owns water and wastewater utility companies which are located in five states throughout the United States (e.g., Falls Water). NW Natural Water, LLC is a subsidiary of Northwest Natural Holding Company.

Northwest Natural Holding Company, through its subsidiaries, provides regulated natural gas distribution and gas transportation services in two states, gas

storage facilities, natural gas asset management services, operates an appliance retail center, water and wastewater utility services in five states, non-regulated renewable natural gas, and other investment businesses.

THE INDUSTRY

Q. Please give a brief overview of the industry in which the Company operates.

A. Falls Water operates in the water supply industry. The water supply industry has a Standard Industrial Classification ("SIC") code of 4941, has water utilities, and includes establishments primarily engaged in distributing water for sale for residential, commercial, and industrial uses. Government controlled establishments such as municipalities, public service districts and other local governmental entities dominate the industry. Private companies or investor owned utilities ("IOU") are active in the construction and improvement of water supply facilities and infrastructure. There are currently about 11,000 U.S. Businesses with a SIC code of 4941.

A comparative industry to the water supply industry is the wastewater supply industry. The wastewater utility industry has a Standard Industrial Classification ("SIC") code of 4952 (Sewerage Systems), has sewer utilities, and includes establishments primarily engaged in the collection and disposal of wastes conducted through a sewer system, including such treatment processes as may be provided. There are currently about 2,200 U.S. Businesses with a SIC code of 4952.

The water supply industry is the most fragmented of the major utility industries with more than 53,000 community water systems in the U.S. (83% of which serve less than 3,300 customers). The nation's water systems range in size

from large municipally owned systems, such as the New York City water system that serves approximately 9 million people, to small systems, where a few customers share a common well.

According to the U.S. Environmental Protection Agency's ("EPA") most recent survey of publicly-owned wastewater treatment facilities in 2008, there are approximately 15,000 such facilities in the nation, serving approximately 74% of the U.S. population. Ninety eight percent of domestic wastewater systems are government owned rather than IOUs. Currently, there are no wastewater utility companies that have actively traded stock.[3]

An estimated 16% of all water supplies are managed or owned by IOUs. IOUs consist of companies with common stock that is either actively traded or inactively traded, as well as companies that are closely held, or not publicly traded. Currently, there are only about nine investor owned water utility companies with publicly traded stock in the U.S.

The water utility industry's and wastewater utility industry's increased compliance with state and federal water purity levels and large infrastructure replacements are driving consolidation of the wastewater utility and water utility industries. Because many wastewater utility and water utility operations do not have the means to finance the significant capital expenditures needed to comply with these requirements, many have been selling their operations to larger, financially stronger utilities.

[3]Many of the publicly traded water utility stocks also own some wastewater utilities but there are no publicly traded utility stocks which are comprised solely of wastewater utilities.

The larger IOUs have been following an aggressive acquisition program to expand their operations by acquiring smaller wastewater and water systems. Generally, they enter a new market by acquiring one or several wastewater or water utilities. After their initial entry into a new market, the larger investor-owned water utility companies continually seek to expand their market share and services through the acquisition of wastewater and water utility businesses and operations that can be integrated with their existing operations. Such acquisitions may allow a company to expand market share and increase asset utilization by eliminating duplicate management, administrative, and operational functions. Acquisitions of small, independent utilities can often add earning assets without necessarily incurring the costs associated with the SDWA if such acquisitions are contiguous to the potential purchaser.

In summary, the result of increased capital spending, to meet the SDWA and CWA requirements[4] and replace the aging infrastructure of many systems, has moved the wastewater and water industries toward consolidation. Moreover, Federal and State regulations and controls concerning water quality are still in the process of being developed and it is not possible to predict the scope or the enforceability of regulations or standards which may be established in the future, or the cost and effect of existing and potential regulations and legislation upon Falls

[4]The SDWA, or Safe Drinking Water Act, is the principal federal law in the United States intended to ensure safe drinking water for the public. Pursuant to the act, the EPA is required to set standards for drinking water quality and oversee all states, localities, and water suppliers who implement these standards. The CWA, or Clean Water Act, is the primary federal law in the United States governing water pollution. The CWA's objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands.

Water. However, as a smaller water system, Falls Water faces the cost of compliance with less financial resources when compared to larger IOU water utilities.

COMPARABLE GROUP

Q. How do you estimate the cost of common equity for Falls Water?

A. Falls Water's common stock is not publicly traded. Accordingly, I employed a comparable group of utility companies with actively traded stock, to determine a market-required cost rate of common equity capital for Falls Water. Since no companies are perfectly identical to Falls Water, it is reasonable to determine the market-required cost rate for a comparable group of utility companies and adjust, to the extent necessary, for investment risk differences between Falls Water and the comparable group.

Q. How did you select the comparable group used to determine the cost of common equity for Falls Water?

A. I selected a comparable group of water utilities to determine the cost of common equity for Falls Water considering security analysts' coverage. Unlike the other utility industries, only a portion of the IOU water companies with publicly traded stock in the U.S. are followed by security analysts. Coverage by security analysts is important when determining a market required cost of common equity. Accordingly, security analysts' coverage was considered when selecting my comparable group. I selected my water utility comparable group, Water Group Followed by Analysts ("Water Group"), based upon a general criteria that includes: (1) all U.S. water utilities that are covered by security analysts as measured by the

existence of sources of published projected five-year growth rates in earnings per share ("EPS"); (2) with a Standard Industrial Classification (SIC) of 4941 (i.e., Water Supply Facilities and Infrastructure); (3) with a North American Industry Classification System (NAICS) of 221310 (i.e., Water Supply and Irrigation Systems); (4) are not the announced subject of an acquisition; (5) currently pay a common dividend and have not reduced their common dividend within the past four years; (6) have market value of common stock, the product of multiplying the closing stock price by the number of common shares outstanding, greater than $500.0 million; and (7) have a total enterprise, the sum of market value, preferred stock and total debt, greater than $700.0 million.

It should be noted that the Water Group is also referred to as the Comparable Group and/or the Comparable Companies.[5] The names of the utilities that comprise the Comparable Group and their bond or credit ratings are listed in Table 1.

[5]All of the Comparable Companies also provide some wastewater service.

Bond and Credit Ratings for
The Water Group Followed by Analysts

	S&P Credit Rating
Water Group Followed by Analysts	
American States Water Co	A+
American Water Works Co Inc	A
California Water Service Gp *	A+
Essential Utilities, Inc.	A
Middlesex Water Co	A
SJW Corp	A-
York Water Co	A-
Average	A

* - The A+ bond rating is that for California Water Service, Inc.

Table 1

Q. Why did you include not being the subject of an acquisition as a criteria for the Water Group?

A. To begin with, there are only about nine investor owned water utility companies with publicly traded stock in the U.S., and some of these companies are very small. As stated previously, the IOU water industry receives only limited exposure on Wall Street.

Additionally, merger activity in the water industry can result in abnormal or "tainted" stock prices in terms of a DCF analysis because premiums are typically paid in corporate acquisitions. That is, when a tender offer is made for the purchase of all the outstanding stock of a company, the amount of that offer usually exceeds the price at which the stock was previously traded in the market. These large

premiums are often reflected in the prices of other water utilities that are not currently the announced subject of an acquisition.[6]

CAPITAL STRUCTURE

Q. What is required to develop an overall rate of return?

A. The first step in developing an overall rate of return is the selection of capital structure ratios to be employed. Next, the cost rate for each capital component is determined. The overall rate of return is the product of weighting each capital component by its respective capital cost rate. This procedure results in Falls Water's overall rate of return being weighted proportionately to the amount of capital and cost of capital of each type of capital.

Q. Is there a set of regulatory and financial principles used in deciding the appropriate capital structure to use for cost of capital purposes?

A. Yes. There is a general set of regulatory and financial principles used in deciding the capital structure issue for cost of capital purposes that are consistent with both regulatory and financial theories:

1) It is generally preferable to use a utility's actual capital structure in developing its rate of return. However, in deciding whether a departure from this general preference is warranted in a particular case, it is appropriate to first look to the issue of whether the utility is a financially independent entity. In determining whether a utility is a financially

[6] Multiple publications mention these impacts including Research Magazine – April 2010, Barron's – March 2001, Utility Business – June 2002, and Value Line Investment Survey – April 2013.

independent entity or self-financing, it is important to look to whether the utility:

- has its own bond rating;
- provides its own debt financing; and
- debt financing is not guaranteed by a parent company.

2) When a utility issues its own debt that is not guaranteed by the public or private parent and has its own bond rating, regulatory and financial principles indicate to use a utility's own capital structure, unless the utility's capital structure is not representative of the utility's risk profile or where use of the actual capital structure would create atypical results. Regulatory and financial principles involve determining whether the actual capital structure is atypical when compared with the capital structures approved by the Commission for other utilities that operate in the same industry (*i.e.,* water utility, gas distribution utility, etc.), as well as those of the proxy utility companies that operate in the same industry.

3) For utility subsidiaries without publicly traded stock, the manner in which the utility obtains its debt financing determines whether it does its own financing. Public Utility Commissions generally determine if a subsidiary has financial, operational, and managerial relationships with its parent entity. However, having such ties typically has not led to use of a parent's capital structure for regulatory purposes, unless the subsidiary utility issues no long-term debt, issues long-term debt only to its parent, or issues long-term debt to outside investors only with the guarantee of its parent.

4) If a utility does not provide its own financing, Public Utility Commissions often look to another entity. Generally, Public Utility Commissions use the actual capital structure of the entity that does the financing for the regulated utility as long as it results in just and reasonable rates. This generally means using a parent company.

5) If the parent's capital structure is used, because it finances the operation of the utility, regulatory and financial principles require adjustments in the utility's allowed rate of return on equity to adjust for risk differences, if any, between the parent and the regulated subsidiary. If, however, the financing entity's capital structure is inconsistent relative to the capital structures of the publicly-traded proxy companies used in the cost of equity analysis and capital structures approved for other utilities that operate in the same industry (*i.e.*, water utility, gas distribution utility, etc.), Public Utility Commissions employ a hypothetical capital structure.

Once the cost of equity for the proxy companies is determined, thereby establishing a range of reasonable returns, Public Utility Commissions should determine where to set the utility's return in that range based upon how the utility's risk compares with that of other utilities that operate in the same industry (*i.e.*, water utility, gas distribution utility, etc.). The risk analysis begins with the assumption that the utility generally falls within a broad range of average risk, absent highly unusual circumstances that indicate an inconsistently high or low risk as compared to other utilities that operate in the same industry (*i.e.*, water utility, gas distribution utility, etc.). Generally, financial risk is a function of the amount of debt in an

entity's capital structure used for cost of capital purposes. When there is more debt, there is more risk.

Q. Does Falls Water directly raise or issue its own debt capital?

A. Yes, currently Falls Water has issued its own debt capital. However, prospectively, Falls Water debt capital will be issued by NW Natural Water, LLC.

Q. What capital structure ratios are appropriate to be used to develop Falls Water's overall rate of return?

A. Consistent with settled rate setting principles, I believe it is necessary to evaluate Falls Water's current cost of capital based on a hypothetical capital structure at December 31, 2022. Falls Water's actual capital structure at December 31, 2022 is 14% debt and 86% common equity, which is not consistent with the range of capital ratios used by the Comparison Group water companies.

Specifically, Falls Water actual 86% common equity ratio is not similar to the Comparison Group's current (September 30, 2022) common equity ratio, which ranged from 40.7% to 62.1% and averaged 50.1% (see page 3 of Schedule 2). The Comparison Group's common equity ratio is relative to companies with an A credit profile based on their bond ratings and have about 555-times more investor provided capital (average $5.4 *billion*) than Falls Water ($9.8 million). The significance that size plays in the market's dictation of acceptable common equity ratios can be seen by examining the size and the common equity ratios of the companies which comprise the Comparison Group.

The amount of investor provided capital of the companies which comprise Comparison Group ranges from $329.5 million to $19,047.0 million (see page 3 of

Schedule 2). The two largest companies in the Comparison Group, or those companies with more than $10,000 million of investor provided capital have common equity ratios which range from 40.7% to 45.6%, while the two smallest companies in the Comparison Group had common equity ratios ranging from 55.8% to 62.1%. The two smallest companies in the Comparison Group have $329.5 million to $713.5 million of investor provided capital. Therefore, even the two smallest companies in the Comparison Group are much larger than Falls Water, since they have about 53-times more investor provided capital (average $521.5 million) than Falls Water's $9.8 million investor provided capital.

Based on the aforesaid, I believe it is appropriate to evaluate Falls Water's current cost of capital based upon a targeted ratemaking capital structure which contains no less than 55% common equity. A targeted ratemaking capital structure of 45% debt and 55% common equity is similar to the smallest companies in the Comparison Group. Further, the recommended ratios are in line with S&P's implied ratios, based upon published financial benchmarks for water utilities, and accounts for some of the risk differences between Falls Water and the Comparison Group.

Q. How does your recommended capital structure compare with ratios employed by other investor-owned companies?

A. The capital structure I recommend for Falls Water reflects a common equity ratio of 55% which is similar to the range of the ratios employed by other investor-owned water companies as shown on pages 1 and 2 of Schedule 2. A comparison of my

recommendation for Falls Water's capital structure ratios to those recently employed by the Comparison Group is shown in Table 2.

Comparison of Capital Structure Ratios

	Falls Water	Water Group	
	At	At	Projected
	12/31/2022	9/30/2022	2026
Debt	45.0	49.8	48.3
Preferred Stock	0.0	0.1	0.0
Common Equity	55.0	50.1	51.7
	100.0	100.0	100.0

Table 2

Falls Water's rate making capital structure ratios are reasonable based upon the above information.

EMBEDDED COST RATE

Q. What embedded cost rates do you recommend be used to calculate Falls Water's overall rate of return?

A. Consistent with my recommended capital structure ratios I recommend using an embedded debt cost rate of 4.61% for Falls Water as reflected in Schedule 1. The 4.61% embedded debt cost rate is a weighted cost rate comprised of Falls Water's actual embedded debt cost rate, 2.80%, and a 5.40%[7] cost rate for the additional

[7] Based upon the settled yields implied in the Treasury Bond future contracts and the long-term and recent trends in spreads between long-term government bonds and A-rated public utility bonds available to me at the time Schedule 11 was prepared, I conclude that the market believes that if the Comparable Companies issued new long-term bonds near term it would be priced to yield about 5.4% based upon their credit profile of A.

hypothetical debt assumed for Falls Water's hypothetical capital structure, as shown on Schedule 1.

FINANCIAL ANALYSIS

Q. Have you reviewed historical financial information of Falls Water as part of your analysis?

A. Yes. On page 1 of Schedule 3, I developed a five-year analysis, ending in 2021, detailing various financial ratios for Falls Water. On Schedule 4, I performed a similar five-year analysis for the Water Group. Schedule 5 reveals the results of operations for a large broad-based group of utilities known as the Standard & Poor's ("S&P") Utilities for the five years ending 2021. This information is useful in determining relative risk differences between different types of utilities.

Comparing Falls Water, the Comparable Group and the S&P Utilities' coverage of fixed charges and the various cash flow coverage proves that the Comparable Group has experienced a higher level of coverage than the S&P Utilities. Reviewing Falls Water's various cash flow coverages shows Falls Water has had higher levels of coverage than the Comparable Group.[8]

Q. What do you conclude from the comparison of all the information shown on Schedules 3 through 5?

A. Taken together, these comparisons show that Falls Water is exposed to risk that is similar in nature but greater in degree compared with the Comparable Groups. This is evident in particular when one considers the size and diversification of Falls

[8] Falls Water's various cash flow coverages reflect their actual common equity ratio that ranged from 74.1% to 89.7% during the years analyzed.

Water, or lack thereof, as compared to the Comparable Companies. Moreover, the evidence from the various financial ratios shows Falls Water's risks as being similar to the Comparable Companies' but less than the larger S&P Utilities.

Q. What information is shown on Schedule 6?

A. Schedule 6 lists the names, issuer credit ratings, common stock rankings, betas and market values of the companies contained in the Comparable Group and the S&P Utilities. As is evident from the information shown on Table 3, the Comparable Group and the S&P Utilities are similar to each other in risk.

	S&P Issuer Credit Rating	S&P Quality Ranking	Value Line Beta	Recent Market Value (Mill $)	Market Quartile Name
Water Group	A	High (A)	0.79	3,138.126	Mid-Cap
S&P Utilities	BBB+	Average (B+)	0.88	25,329.726	Large-Cap

Table 3

The Water Group's average issuer credit ratings and common stock rankings are higher than the S&P Utilities. The average beta of the Comparable Group, 0.79, is less than the average beta of the S&P Utilities, 0.88. Beta is a measure of volatility or market risk; the higher the beta, the higher the market risk. The market values provide an indication of the relative size of each group. As a generalization, the smaller the average sizes of a group, the greater the risk.

Page 2 of Schedule 6 shows that Falls Water has generally experienced the lowest return on equity ("ROE") when compared to the Comparable Companies.

Further, Falls Water's dividend payout ratio is lower than the Comparable Companies' dividend payout ratio.

S&P, the predominant bond rating agency, considers profit to be a fundamental determinant of credit protection. S&P states that a firm's profit level:

> Whether generated by the regulated or deregulated side of the business, profitability is critical for utilities because of the need to fund investment-generating capacity, maintain access to external debt and equity capital, and make acquisitions. Profit potential and stability is a critical determinant of credit protection. A company that generates higher operating margins and returns on capital also has a greater ability to fund growth internally, attract capital externally, and withstand business adversity. Earnings power ultimately attests to the value of the company's assets, as well. In fact, a company's profit performance offers a litmus test of its fundamental health and competitive position.
>
> Accordingly, the conclusions about profitability should confirm the assessment of business risk, including the degree of advantage provided by the regulatory environment.[9]

Q. What information is shown on Schedule 7?

A. Schedule 7 reveals the capital intensity and capital recovery for Falls Water, the Comparable Companies and the S&P Utilities. Based upon the 2021 capital intensity ratio of plant to revenues, Falls Water ($3.91) is less capital intensive as compared to the Water Group ($6.60) and more than the S&P Utilities ($4.78). From a purely financial point of view, based on current accounting practices, the rate of capital recovery or depreciation rate is an indication of risk because it

[9]Standard & Poor's Ratings Services, *Criteria, Utilities: Key Credit Factors: Business And Financial Risks In The Investor-Owned Utilities Industry*, Nov. 26, 2008, pgs. 8-9.

represents cash flow and the return of an investment. Falls Water's average rate of capital recovery is higher than the Comparable Group's, suggesting less risk.

The return on equity and depreciation expense provides the margin for coverage of construction expenditures. For a utility company, depreciation expense is the single largest generator of cash flow. From a financial analyst's point of view, cash flow is the life blood of a utility company. Without it, a utility cannot access capital markets, it cannot construct plant, and therefore, it cannot provide service to its customers.

RISK ANALYSIS

Q. Please explain the information shown on Schedule 8.

A. Schedule 8 details the size difference between Falls Water and the Comparable Group. Company size is an indicator of business risk and is summarized in Table 4.

Number of Times Larger Than Falls Water	
	Water Group
Capitalization	689.3x
Revenues	440.4x
Number of Customers	139.5x

Table 4

As shown in Table 4, Falls Water is much smaller than the Water Group. The size of a company affects risk. A smaller company requires the employment of proportionately less financial leverage (*i.e.,* debt and preferred capital) than a

larger company to balance out investment risk. If investment risk is not balanced out, then a higher cost of capital is required.

Q. Why is size significant to your analysis?

A. The size of a company can be likened to ships on the ocean, since a large ship has a much better chance of weathering a storm than a small ship. The loss of a large customer will impact a small company much more than a large company because a large customer of a small company usually accounts for a larger percentage of the small company's sales.

Moreover, a larger company is likely to have a more diverse geographic operation than a smaller company, which enables it to sustain earnings fluctuations caused by abnormal weather in one portion of its service territory. A larger company operating in more than one regulatory jurisdiction enjoys "regulatory diversification" which makes it less susceptible to adverse regulatory developments or eminent domain claims in any single jurisdiction. Further, a larger company with a more diverse customer base is less susceptible to downturns associated with regional economic conditions than a small company. For example, on average, the average company in the Water Group provides water/sewer service in multiple states for about 968,000 customers. The average population of the communities served by the average company in the Water Group is about 3.5 million people. These wide-ranging operations provide the Water Group substantial geographic, economic, regulatory, weather and customer diversification. Falls Water provides regulated water service to about 6,940 customers (2021). The concentration of Falls Water's business in eastern Idaho makes it very susceptible to any adverse

development in local regulatory, economic, demographic, competitive and weather conditions.

Further, S&P, a major credit rating agency, recognizes the importance that diversification and size play in credit ratings. S&P believes some of the critical factors include: regional and cross-border market diversification (mitigates economic, demographic, and political risk concentration); customer diversification; and regulatory regime diversification.[10]

The size of a company can be a barrier to fluid access to capital markets (*i.e.*, liquidity risk). Investors require compensation for the lack of marketability and liquidity of their investments. If no compensation is provided, then investors, or at least sophisticated investors, shy away.

Q. Is the risk related to the Company's small size mitigated by who owns the Company's stock?

A. No, investment risk does not change due to ownership. Investment risk is unique to an enterprise, not who owns that enterprise. For example, the market yield provided by a bond does not change based on the geographic distribution of its investors, the wealth of its investors, or the nationality of its investors and the same to true for common stock. That is, common stocks do not provide different amounts of dividends depending on who owns the stock. Similarly, a fair rate of return for a business enterprise should not change based on the composition of its investors either.

[10]Standard & Poor's, Corporate Ratings Criteria, Utilities: Key Credit Factors: Business and Financial Risks in The Investor-Owned Utilities Industry, Nov. 26, 2008.

Q. Is the impact of size commonly recognized?

A. Yes, the National Association of Regulatory Utility Commissioners ("NARUC"), and the majority of acclaimed financial texts, recognize that size affects relative business risk. Liquidity risk and the existence of the small firm effect relating to business risk of small firms are well-documented in financial literature.[11] Investors' expectations reflect the highly-publicized existence of the small firm effect. For example, many mutual funds classify their investment strategy as small capitalization in an attempt to profit from the existence of the small firm effect.

As previously discussed, S&P recognizes that size plays a role in credit ratings.

> Standard & Poor's has no minimum size criterion for any given rating level. However, size turns out to be significantly correlated to ratings. The reason: size often provides a measure of diversification, and/or affects competitive position. . . . Small companies are, almost by definition, more concentrated in terms of product, number of customers, or geography. In effect, they lack some elements of diversification that can benefit larger companies. To the extent that markets and regional economies change, a broader scope of business affords protection. This consideration is balanced against the performance and prospects of a given business. . . . In addition, lack of financial flexibility is usually an important negative factor in the case of very small companies. Adverse developments that would simply be a setback for companies with greater resources could spell the end for companies with limited access to funds.[12]

[11]Banz, Rolf, W. "The Relationship Between Return and Market Value of Common Stocks," Journal of Financial Economics, 9:3-18 1981. For subsequent studies see Fama and French, etc.
[12]*Standard & Poor's*, Corporate Ratings Criteria 2006; pg. 22.

As shown on Schedule 9, size plays a role in the composition of investors, and hence liquidity. In 2021, about 112% of the Water Group's shares traded while the larger companies comprising the S&P Utilities had a much higher trading volume of 149%. Insiders[13] hold more than eight times more, as a percent to total, of the Water Group's shares than the S&P Utilities. Currently, only about 71% of the Water Group shares are held by institutions[14] while the larger companies comprising the S&P Utilities had much higher institutional holdings of 80%. Due to small size and less interest by financial institutions, fewer security analysts follow the Comparable Group and none follow Falls Water.

The lack of trading activity may affect the cost of equity estimates for small entities such as Falls Water and the Water Group. When stock prices do not change because of inactive trading activity, estimates of dividend yield for use in a dividend cash flow model and beta estimates for use in the capital asset pricing model are affected. In a stock market that is generally up, the beta estimates for the Comparable Companies may be understated due to thin trading.

Q. Do Falls Water and the Comparable Companies have similar operating risks?

A. Yes. From an operations standpoint, Falls Water and the Comparable Companies have similar risks and are indistinguishable. Both are required to meet Clean Water Act and Safe Drinking Water Act requirements and are also required to provide

[13]An insider is a director or an officer who has a policy-making role or a person who is directly or indirectly the beneficial owner of more than 10% of a certain company's stock.

[14]Institutional holders are those investment managers having a fair market value of equity assets under management of $100 million or more. Certain banks, insurance companies, investment advisers, investment companies, foundations and pension funds are included in this category.

safe and reliable services to their customers and comply with Commission regulations.

Q. Is there any single measure that best shows investment risk from a common stockholder's perspective?

A. No. However, from a creditor's viewpoint, the best measure of investment risk is debt rating. The debt rating process generally provides a good measure of investment risk for common stockholders because the factors considered in the debt rating process are usually relevant factors that a common stock investor would consider in assessing the risk of an investment. Credit rating agencies, such as S&P, assess the risk of an investment into two categories based on: fundamental business analysis; and financial analysis.[15] The business risk analysis includes assessing: Country risk; industry risk; competitive position; and profitability/peer group comparisons. The financial risk analysis includes assessing: accounting; financial governance and policies/risk tolerance; cash flow adequacy; capital structure/asset protection; and liquidity/short-term factors.

Q. What is the bond rating of Falls Water and the Comparable Group?

A. Page 1 of Schedule 10 shows the average bond/credit rating Comparable Group. The Comparable Group has an A credit profile and Falls Water does not have bonds rated. The major bond rating/credit rating agencies append modifiers, such as +, - for S&P and 1, 2, and 3 for Moody's Investors Service ("Moody's") to each generic rating classification. For example, an "A" credit profile is comprised of three

[15] *Standard & Poor's*, Corporate Ratings Criteria, General: Criteria Methodology: Business Risk/Financial Risk Matrix Expanded, May 27, 2009 and *Standard & Poor's*, Criteria Corporates General: Corporate Methodology, November 19, 2013.

subsets such as A+, A, A- for S&P or A1, A2 or A3 for Moody's. The modifier of either "+" or "1" indicates that the obligation ranks in the higher end of its generic rating category; the modifier "2" indicates a mid-range ranking; and the modifier of "-" or "3" indicates a ranking in the lower end of that generic rating category.

S&P and Moody's publish financial benchmark criteria necessary to obtain a bond rating for different types of utilities. As a generalization, the higher the perceived business risk, the more stringent the financial criteria so the sum of the two, business risk and financial criteria, remains the same.

Q. What are some financial benchmarks applied by credit rating agencies for rating public utility debt?

A. S&P describes their range of financial benchmarks as

> Risk-adjusted ratio guidelines depict the role that financial ratios play in Standard & Poor's rating process, since financial ratios are viewed in the context of a firm's business risk. A company with a stronger competitive position, more favorable business prospects, and more predictable cash flows can afford to undertake added financial risk while maintaining the same credit rating. The guidelines displayed in the matrices make explicit the linkage between financial ratios and levels of business risk.[16]

Q. What other information is shown on Schedule 10?

A. Page 2 of Schedule 10 summarizes the application of S&P's and Moody's measures of financial risk for Falls Water and the Comparable Group. S&P's and Moody's measures of financial risk are broader than the traditional measure of financial risk (*i.e.,* leverage). Besides reviewing amounts of leverage employed, S&P and Moody's also focus on earnings protection and cash flow adequacy.

[16]Standard & Poor's Corporate Rating Criteria, 2000.

As is evident from the information shown on page 2 of Schedule 10, for the five years ending in 2021 and for the year 2021, Falls Water's cash flow adequacy ratios were generally higher than the Comparable Companies in most instances.[17] Comparing the Falls Water and the Water Group's measures of cash flow adequacy shows that the Falls Water has experienced a higher level of cash flow adequacy than Water Group, indicating that Falls Water is a lower investment risk than the Water Group. Based solely upon Falls Water's historical ratios, it is my opinion that Falls Water's credit profile is similar but higher to the Comparable Companies.

However, based solely upon Falls Water's size, it is my opinion that Falls Water's credit profile is lower than the Comparable Groups'. Based on Falls Water's smaller size, it is highly likely that Falls Water's credit profile is below BBB (i.e., BB), based solely upon size. An analysis of corporate credit ratings, shown on page 4 of Schedule 10, indicates that there is an 90% (100%-0%-1%-6%-3%=90%) chance that Falls Water's credit profile falls below BBB based on their small size alone.[18] As S&P has stated, size is significantly correlated to credit ratings.

An analysis of corporate credit ratings, summarized on page 4 of Schedule 10, found The Berkshire Gas Company ("Berkshire") to be the smallest utility with a credit rating. Berkshire's credit rating is only A- despite having a capitalization

[17] Falls Water's various cash flow coverages reflect their actual common equity ratio that ranged from 74.1% to 89.7% during the years analyzed.

18 Additionally, I found no companies with bonds rated higher than BB that had less than $198 million of capitalization. Of these companies with less than $198 million of capitalization, only 17% had bonds rated BB and 83% had bonds rated BB.

comprised of about $198 million and a common equity ratio of 70%. According to this analysis of corporate credit ratings, the smallest rated water utility is The York Water Company ("York"). York's credit rating is only A- notwithstanding having a capitalization of about $301 million and a common equity ratio of 51%.

In order to compete with the Comparable Group for capital, in the future, it will be necessary for Falls Water to achieve higher returns on equity, and increased cash flow just to maintain a similar credit quality.

S&P has stated:

> ... low authorized returns may affect the industry's ability to attract necessary capital to develop new water supplies and upgrade the quality of existing supplies . . . Traditional ratemaking policy has not provided sufficient credit support during the construction cycle of the electric industry over the past 15 years. To avoid a repeat in the water industry, regulators must be aware of the increased challenges the industry faces.[19]

Investors will not provide the equity capital necessary for increasing the amount of common equity in a capital structure unless the regulatory authority allows an adequate rate of return on the equity.[20]

Q. What do you conclude from the various measures of investment risk information you have testified to?

A. A summary of my conclusions regarding the risk analyses discussed previously is shown in Table 5. Overall, the information summarized in Table 5 indicates that Falls Water has similar investment risk as the Water Group.

[19]Standard & Poor's CreditWeek, May 25, 1992 (emphasis added).

[20]National Association of Regulatory Utility Commissioners, loc. cit.

Summary of Risk Analyses		
	Falls Water	Water Group Followed by Analysts
1. Business Risk:		
2. Country Risk	Similar Risk Level	
3. Industry Risk	Similar Risk Level	
4. Competitive Position	Similar Risk Level	
5. Profitability/Peer Group Comparisons	Higher Risk Level	
6. Capitalization Ratios & Financial Risk (Leverage)*	Similar Risk Level	
7. Debt Cost Rate*	Similar Risk Level	
8. Relative Size:		
9. Regulatory Diversification	Higher Risk Level	
10. Economic Diversification	Higher Risk Level	
11. Demographic Diversification	Higher Risk Level	
12. Diversification of Weather Conditions	Higher Risk Level	
13. Customer Concentration of Revenues	Higher Risk Level	
14. Capital Intensity		Higher Risk Level
15. Capital Recovery		Higher Risk Level
16. Lower Liquidity:		
17. Institutional Holdings	Higher Risk Level	
18. Insider Holdings	Higher Risk Level	
19. Percentage of Shares Traded	Higher Risk Level	
20. Required To Meet Clean Water Acts and Safe Drinking Water Act	Similar Risk Level	
21. Credit Market Financial Risk Metrics		Higher Risk Level
22. Cash Flow Adequacy		Higher Risk Level
23. Credit Rating / Credit Profile	Similar Risk Level	

* - Based on recommended capital structure for rate making purposes.

Comment: The terms "Similar Level " indicates same amount of risk and the terms "Higher Level " indicates greater risk.

Table 5

CAPITAL COST RATES

Q. What information is shown on Schedule 11?

A. Schedule 11 reviews long-term and short-term interest rate trends. Long-term and short-term interest rate trends are reviewed to ascertain the "sub-flooring" or "basement" upon which the Comparable Companies' common equity market capitalization rate is built. Based upon the settled yields implied in the Treasury Bond future contracts and the long-term and recent trends in spreads between long-

term government bonds and A-rated public utility bonds available to me at the time Schedule 11 was prepared, I conclude that the market believes that if the Comparable Companies issued new long-term bonds near term, they would be priced to yield about 5.4% based upon a credit profile of "A." Further, it is reasonable to conclude the market anticipates that long-term government bonds will be priced to yield about 3.8%, near term.

Since October 2008, the Federal Reserve has been monetizing US Treasury debt to artificially suppress interest rates through expansionary money policies (i.e., quantitative easing). The Federal Reserve, with effectively unlimited money at its disposal, intervenes at any time it wishes, in whatever volume it wishes, to make sure that Treasury bond and bill prices and yields are exactly what the Federal Reserve wants them to be. The US Treasury bond market, and mortgage market, has become an artificial market with no connection to objective risk and interest rates.

In August 2011, the Federal Reserve began "Operation Twist." Under "Operation Twist," the Federal Reserve began buying $400 billion of long-dated or long-term US Treasury debt, financed by selling short-term US Treasury debt with three years to go or less. The goal of "Operation Twist" was to try to drive long-term rates lower, which the Federal Reserve thought would help the mortgage market. This process has created an artificial demand for the US Treasury debt themselves, and easily drives interest rates artificially lower and deceives investors into believing US Treasury debt is safe with wide demand. This has resulted in the

entire capital system being impacted by the Federal Reserve's distortion of the price of risk.

> In the real world of economics, the borrower pays an interest rate to a lender, who makes money (interest) by taking on the risk of lending and deferring gratification. The lender is willing to not spend his money now. In a free market economy, interest rates are essentially a price put on money, and they reflect the time preference of people. Higher interest rates reflect a high demand for borrowing and lower savings. But the higher rates automatically correct this situation by encouraging savings and discouraging borrowing. Lower interest rates will work the opposite way. When the government/central bank tampers with interest rates, savings and lending are distorted, and resources are misallocated. This is evident in looking back on the housing bubble. The artificially low interest rates signaled that there was a high amount of savings. But it was a false signal. There was also a signal for people to borrow more. Again, it was a false signal. As these false signals were revealed, the housing boom turned into a bust.[21]

More recently, in response to COVID-19, the Federal Reserve provided monetary and fiscal stimulus to increase liquidity in the form of new fiscal stimulus programs and rate cuts. "For context, new fiscal stimulus and total fiscal deficits in the US are roughly double the levels seen in 2008-2009, and the US fiscal deficit we project for 2020 of 15%-18% is only matched by deficits seen at the height of WWII in 1942-1943."[22] The combined result of these actions by the Federal Reserve and investors' flight to quality resulted in artificial and historically low risk-free rates as measured by the 30-year treasury bond yield.

[21]Pike, Geoffrey "The Threat of Negative Interest Rates," Wealth Daily, May 30, 2014, http://www.wealthdaily.com/articles/the-threat-of-negative-interest-rates/5185, (6/03/2014)

[22] https://www.jpmorgan.com/jpmpdf/1320748588999.pdf, (5/29/20).

Q. What are some of the results from the FED's monetary and fiscal stimulus?

A. The FED's quantitative easing of expanding its own balance sheet, by buying bonds, and therefore injecting money into the economy, floods the economy with additional cash, keeping interest rates low and impacts equity markets. Additionally, the FED's uninterrupted and aggressive monetary expansion policy necessarily puts pressure on inflation. The FED's monetary and fiscal stimulus, which included artificial and historically low interest rates, have produced some of the highest inflation rates in the last 40 years according to CNBC.

> Inflation rose 9.1% in June, even more than expected, as consumer pressures intensify.
>
> Shoppers paid sharply higher prices for a variety of goods in June as inflation kept its hold on a slowing U.S. economy, the Bureau of Labor Statistics reported Wednesday.
>
> The consumer price index, a broad measure of everyday goods and services related to the cost of living, soared 9.1% from a year ago, above the 8.8% Dow Jones estimate. That marked the fastest pace for inflation going back to November 1981.[23]

In response to the recent level of inflation rates, the Federal Reserve announced its goal of increasing interest rates as high as needed to get inflation back to 2%.

> Americans are headed for a painful period of slow economic growth and possibly rising joblessness as the Federal Reserve raises interest rates to fight high inflation, U.S. central bank chief Jerome Powell warned on Friday in his bluntest language yet about what is in store for the world's biggest economy.
>
> In a speech kicking off the Jackson Hole central banking conference in Wyoming, Powell said the Fed will raise rates as high as needed

[23] Cox, J. (2022, July 13). Inflation rose 9.1% in June, even more than expected, as consumer pressures intensify. *CNBC*. Retrieved from https://www.cnbc.com/2022/07/13/inflation-rose-9point1percent-in-june-even-more-than-expected-as-price-pressures-intensify.html, (7/13/22).

> to restrict growth, and would keep them there "for some time" to bring down inflation that is running at more than three times the Fed's 2% goal.
>
> "Reducing inflation is likely to require a sustained period of below-trend growth," Powell said. "While higher interest rates, slower growth, and softer labor market conditions will bring down inflation, they will also bring some pain to households and businesses. These are the unfortunate costs of reducing inflation. But a failure to restore price stability would mean far greater pain."
>
> As that pain increases, Powell said, people should not expect the Fed to dial back its monetary policy quickly until the inflation problem is fixed.[24]

Prospectively the capital markets will be affected by the upcoming unprecedented large Treasury financings coupled with increased interest rates. Investors provide capital based upon risk and return opportunities and investors will not provide common equity capital when higher risk-adjusted returns are available.

COMMON EQUITY COST RATE ESTIMATE

Q. What is the best method of estimating common equity cost rates?

A. There is no single method (model) suitable for estimating the cost rate for common equity. While a single investor may rely solely upon one model in evaluating investment opportunities, other investors rely on different models. Most sophisticated investors who use an equity valuation model rely on many models in evaluating their common equity investment alternatives. Therefore, the average price of an equity security reflects the results of the application of many equity models used by investors in determining their investment decisions.

[24] Schneider, H and Saphir, A (2022, August 26). Powell sees pain ahead as Fed sticks to the fast lane to beat inflation. *REUTERS*. Retrieved from https://www.reuters.com/markets/us/feds-powell-pain-tight-policy-slow-growth-needed-for-some-time-beat-inflation-2022-08-26/, (8/27/22).

The application of any single model to estimate common equity cost rates is not appropriate because the security price for which the equity cost rate is being estimated reflects the application of many models used in the valuation of the investment. That is, the price of any security reflects the collective application of many models. Accordingly, if only one model is used to estimate common equity cost rates, that cost rate will most likely be different from the collective market's cost rates because the collective valuation in the market reflects more than one method.

Noted financial texts, investor organizations and professional societies all endorse the use of more than one valuation method. "We endorse the dividend discount model, particularly when used for establishing companies with consistent earnings power and when used along with other valuation models. It is our view that, in any case, an investor should employ more than one model."[25]

The American Association of Individual Investors state, "No one area of investment is suitable for all investors and no single method of evaluating investment opportunities has been proven successful all of the time."[26]

In their study guide, the National Society of Rate of Return Analysts state, "No cost of equity model or other concept is recommended or emphasized, nor is any procedure for employing any model recommended . . . it remains important to

[25]Sidney Cottle, Roger F. Murray and Frank E. Block, Graham and Dodd's Securities Analysis 5th Edition, McGraw-Hill, Inc., 1988, p. 568 (emphasis added).

[26]Editorial Policy, AAII Journal, American Association of Individual Investors, Volume 18, No. 1, January 1996, p. 1.

recognize that alternative methods exist and have merit in cost of capital estimation. To this end, analysts should be knowledgeable of a broad spectrum of cost of capital techniques and issues."[27]

Several different models should be employed to measure accurately the market-required cost of equity reflected in the price of stock. Therefore, I used three recognized methods: the DCF shown on Schedule 12, the CAPM shown on Schedule 17, and the RP shown on Schedule 18.

DISCOUNTED CASH FLOW

Q. Please explain the discounted cash flow model.

A. The DCF is based upon the assumption that the price of a share of stock is equal to a future stream of cash flows to which the holder is entitled. The stream of cash flows is discounted at the investor-required cost rate (cost of capital).

Although the traditional DCF assumes a stream of cash flow into perpetuity, a termination, or sale price can be calculated at any point in time. Therefore, the return rate to the stockholder consists of cash flow (earnings or dividends) received and the change in the price of a share of stock. The cost of equity is defined as:

> ...the minimum rate of return that must be earned on equity finance and investments to keep the value of existing common equity unchanged. This return rate is the rate of return that investors expect to receive on the Company's common stock . . . the dividend yield plus the capital gains yield . . . [28]

[27]David C. Parcell, The Cost of Capital - A Practitioners Guide, National Society of Rate of Return Analysts, 1995 Edition.
[28]J. Fred Weston and Eugene F. Brigham, Essentials of Managerial Finance, 3rd ed. (The Dryden Press), 1974, p. 504 (emphasis added).

Q. Please explain how you calculated your dividend yield in the DCF shown on Schedule 12.

A. As shown on page 1 of Schedule 12, I used the average dividend yield of 1.8% for the Water Group. The individual dividend yields are shown on page 2 of Schedule 12 and are based upon the most recent months' yield, February 2023, and the twelve-month average yield, ending February 2023. The second input to a market DCF calculation is the determination of an appropriate share price growth rate.

Q. What sources of growth rates did you review?

A. I reviewed both historical and projected growth rates. Schedule 13 shows the array of projected growth rates for the Comparable Companies that are published. Specific historical growth rates are shown for informational purposes because I believe the meaningful historical growth rates are already considered when analysts arrive at their projected growth rates. Nonetheless, some investors may still rely on historical growth rates.

Q. Please explain the sources of the projected growth rates shown on Schedule 13.

A. I relied upon four sources for projected growth rates, First Call, S&P, Zacks Investment Research and Value Line.[29]

Q. Did you review any other growth rates besides those shown on Schedule 13?

A. Yes. I reviewed EPS growth rates reflecting changes in return rates on book common equity (ROE) over time. I summarized recent ROEs on page 1 of

[29]With the exception of Value Line, the earnings growth rate projections are consensus estimates five-year EPS estimates. These consensus estimates are compiled from more than 1,700 financial analysts and brokerage firms nationwide. It should be noted that none of the consensus forecasts provides projected DPS estimates. Value Line publishes projected Cash flow, EPS and DPS five-year growth projections as well.

Schedule 14 and compared those to the Water Group's higher levels projected to be achieved by Value Line, as shown on page 2 of Schedule 14. ROEs increase when EPS grows at much higher/faster rates than book value.

I also reviewed industry specific average projected growth rates that are published by Zacks for the industries in which the Comparable Companies operate. According to Zacks, the Water Group's industry is projected to have EPS growth rates that average 9.8% over the next five years.

Q. What do you conclude from the growth rates you have reviewed?

A. Table 6 summarizes some of the various growth rates reviewed.

Summary of Growth Rates

	Water Group
Projected 5 Year Growth in EPS	7.0
Actual 5 Year Growth in EPS	5.4
Projected 5 Year Growth in DPS	7.3
Projected 5 Year Growth in EPS for the industry	9.8

Table 6

Academic studies suggest that growth rate conclusions should be tested for reasonableness against long-term interest rate levels. Further, the minimum growth rate must at least exceed expected inflation levels. Otherwise, investors would experience decreases in the purchasing power of their investment. Finally, the combined result of adding the growth rate to the market value dividend yield must provide a sufficient margin over yields of public utility debt.

Q. What method did you use to arrive at your growth rate conclusion?

A. No single method is necessarily the correct method of estimating share value growth. It is reasonable to assume that investors anticipate that the Water Group's current ROE will expand to higher levels. The published historical earnings growth rates for the Water Group averages 5.4%. Because there is not necessarily any single means of estimating share value growth, I considered all of this information in determining a growth rate conclusion for the Comparable Companies.

Moreover, while some rate of return practitioners would advocate that mathematical precision should be followed when selecting a growth rate, the fact is that investors do not behave in the same manner when establishing the market price for a stock. Rather, investors consider both company-specific variables and overall market sentiment such as inflation rates, interest rates and economic conditions when formulating their capital gains expectations. This is especially true when one considers the relatively meaningless negative growth rates. That is, use of a negative growth rate in a DCF implies that investors invest with the expectation of losing money.

The range of growth rates previously summarized supports the reasonableness of an expected 7.0% growth rate for the Water Group based primarily on the projected five-year growth rates and considering the Water Group's industry projected EPS growth rates of 9.8%. Like the projected growth rates, this investor-expected growth rate of 7.0% is based on a survey of projected and historical growth rates published by established entities, including First Call, S&P, Zacks Investment Research and Value Line. Use of information from these

unbiased professional organizations provides an objective estimation of investor's expectations of growth. Based on the aforesaid, all growth rates for the Comparison Companies have been considered and have been given weight in determining a 7.0% growth rate for the Water Group.

Q. What is your market value DCF estimate for the Comparable Companies?

A. The market value DCF cost rate estimate for the Water Group is 8.9%, as detailed on page 1 of Schedule 12.

Q. Are there other considerations that should be taken into account in reviewing a market value capitalization DCF cost rate estimate?

A. Yes. It should be noted that although I recommend specific dividend yields for the Comparable Group, I recommend that less weight be given to the resultant market value DCF cost rate due to the market's current market capitalization ratios and the impact that the market-to-book ratio has on the DCF results. The Comparable Companies' current market-to-book ratios of 302% and low dividend yields are being affected by the aforementioned policy of the Federal Reserve that has resulted in the mispricing of capital due to artificial interest rates, not DCF fundamentals.

Although the DCF cost for common equity appears to be based upon mathematical precision, the derived result does not reflect the reality of the marketplace since the model proceeds from unconnected assumptions. The traditional DCF derived cost rate for common equity will continuously understate or overstate investors' return requirements as long as stock prices continually sell above or below book value. A traditional DCF model implicitly assumes that stock price will be driven to book value over time. However, such a proposition is not

rational when viewed in the context of an investor purchasing stock above book value. It is not rational to assume that an investor would expect share price to decrease 67% (100%÷302%=33%-100%=67%) in value to equal book value.

Utility stocks do not trade in a vacuum. Utility stock prices, whether they are above or below book value, reflect worldwide market sentiment and are not reflective of only one element.

Q. What do you mean by your statement that utility stocks are not traded in a vacuum?

A. Utility stocks cannot be viewed solely by themselves. They must be viewed in the context of the market environment. Table 7 summarizes recent market-to-book ratios ("M/B") for well-known measures of market value reported in the March 13, 2023 issue of Barron's and the Water Group's average M/B as shown on page 1 of Schedule 14.

	M/B Ratios(%)
Dow Jones Industrials	429
Dow Jones Transportation	442
Dow Jones Utilities	204
S&P 500	383
S&P Industrials	519
Vs.	
Water Group	302

Table 7

Utility stock investors view their investment decisions compared with other investment alternatives, including those of the various market measures shown in Table 7.

Q. How does a traditional DCF implicitly assume that market price will equal book value?

A. Under traditional DCF theory, price will equal book value (M/B=1.00) only when a company is earning its cost of capital. Traditional DCF theory maintains that a company is under-earning its cost of capital when the market price is below book value (M/B<1.00), while a company over-earning its cost of capital will have a market price above its book value (M/B>1.00). If this were true, it would imply that the capitalistic free-market is not efficient because the overwhelming majority of stocks would currently be earning more than their cost of capital. Table 7 shows that most stocks sell at an M/B that is greater than 1.0.

Q. Please explain why such a phenomenon would show that the capitalistic free-market is not efficient.

A. Historically, the S&P 500, which represented the largest 500 companies listed on exchanges in the United States, have not sold at an M/B of 1.0 during the last 24-years, 1999-2022. Based upon the traditional DCF assumption, which suggests that companies with M/Bs greater than 1.0 earn more than their cost of capital, this data would suggest that the S&P 500 companies have earned more than their cost of capital while competing in a competitive environment over the 24-year period. In

a competitive market, new companies would continually enter the market up to the point that the earnings rate was at least equal to their cost of capital.

During this period the S&P 500 sold at an average M/B of 306% while experiencing a ROE of 18.0% over a period in which interest rates averaged 3.9%. It is important to note that during this period the S&P 500 M/B ranged from 192% to 490%, all while competing in competitive markets.

Q. What is the significance of S&P 500 m/b and the cost of capital for a water utility?

A. As stated previously, utility stocks do not trade in a vacuum. They must compete for capital with other firms including the S&P 500 stocks. Over time, there has been a relationship between M/Bs of S&P 500 stocks and utility stocks. Although S&P 500 stocks have generally sold at a higher multiple of book value than utility stocks, both have tracked in similar directions. Because utility and S&P 500 stock prices relative to book values move in similar directions, it is irrational to conclude that stock prices that are different from book value, either higher or lower, suggests that a firm is over-or under-earning its cost of capital when competitive, free-markets exist.

Q. Does the market value DCF provide a reasonable estimate of the Water Group's common equity cost rate?

A. No, the DCF only provides a reasonable estimate of the Comparable Group's common equity cost rate when their market price and book value are similar

(M/B=100%).[30] A DCF will overstate a common equity cost rate when M/Bs are below 100% and understate when they are above 100%. Since the Comparable Group's current M/Bs average 302%, the DCF understates their common equity cost rate. Schedule 15 provides a numerical illustration of the impact of M/Bs on investors' market returns and DCF returns. The reason that DCF understates or overstates investors' return requirements depending upon M/B levels is because a DCF-derived equity cost rate is applied to a book value rate base while investors' returns are measured relative to stock price levels. Based upon this, I recommend that less weight be given to the market value DCF cost rate unless the increased financial risk, resulting from applying a market value cost rate to a book value, is accounted for.

Q. How do you resolve the financial risk difference between market value cost rates and book value cost rates?

A. The basic proposition of financial theory regarding the economic value of a company is based on market value. That is, a company's value is based on its **market value** weighted average cost of capital.[31] The American Society of Appraisers, ASA Business Valuation Standards, 2009, and the National Association of Certified Valuation Analysts, Professional Standards, 2007, use the same definition:

[30]Roger A Morin, Regulatory Finance - Utilities' Cost of Capital, Public Utility Reports, Inc., 1994, pp. 236-237.

[31]For other examples, see http://www.investinganswers.com/financial-dictionary/financial-statement-analysis/weighted-average-cost-capital-wacc-2905. Also see http://www.wallstreetmojo.com/weighted-average-cost-capital-wacc/ , or http://accountingexplained.com/misc/corporate-finance/wacc .

> Weighted Average Cost of Capital (WACC). The cost of capital (discount rate) determined by the weighted average, **at market values**, of the cost of all financing sources in the business enterprise's capital structure. (Emphasis added)

Accordingly, the market value derived cost rate reflects the financial risk or leverage associated with **capitalization ratios based on market value**, not book value.

As shown on page 1 of Schedule 16, for the Water Group there is a large difference in leverage as a result of the average $4.400 **billion** difference in market value common equity and book value common equity. This difference in market values and book values results in debt/equity ratios based on market value of 26.2%/73.8% (debt/equity) verses 49.8%/50.2% (debt/equity) based on book value as shown on page 1 of Schedule 16. The larger the difference between market values and book values the less reliable the models' results are because **the models provide an estimate of the cost of capital of market value**, not book value.

Financial theory concludes that capital structure and firm value are related. Since capital structure and firm value are related, an adjustment is required when a cost of common equity model is based on market value and if its results are then applied to book value. As explained previously, the market value derived cost rate reflects the financial risk or leverage associated with **capitalization ratios based on market value**, not book value. The authors Brealey, Myers and Allen provide a similar definition of the cost of capital being based on market capitalization, not book value,

> The values of debt and equity add up to overall firm value (D + E = V) and firm value V equals asset value. **These figures are all**

> **market values, not book (accounting) values**. The market value of equity is often much larger than the book value, so the market debt ratio D/V is often much lower than a debt ratio computed from the book balance sheet.[32]

The work of Modigliani and Miller concludes that the market value of any firm is independent of its capital structure and this is precisely the reason why an adjustment is appropriate. The only way for the market value of a firm to remain independent of its capital structure is if the capital cost rates change to offset changes in the capital structure. If the capital cost rates do not change to offset changes in the capital structure, then the value of the firm will change. Clearly an adjustment is required when a cost of common equity model is based on **market value** and if its results are then applied to **book value** because the capital structure is changed from **market value** capitalization ratios to **book value** capitalization ratios.

Differences in the amount of leverage employed can be quantified based upon the Comparable Group's leveraged beta being "unleveraged" through the application of the a "Hamada Model."

> The Hamada equation is a fundamental analysis method of analyzing a firm's cost of capital as it uses additional financial leverage, and how that relates to the overall riskiness of the firm. The measure is used to summarize the effects this type of leverage has on a firm's cost of capital—over and above the cost of capital as if the firm had no debt.[33]

[32]Brealey, Myers and Allen, Principles of Corporate Finance, 10th edition, page 216 (emphasis added).
33 Hargrave, Marshall. "Hamada Equation Definition, Formula, Example," *Investopedia*. Accessed 3/14/23. https://www.investopedia.com/terms/h/hamadaequation.asp.

The Hamada Model combines two financial theorems: the Modigliani-Miller Theorem and the CAPM.[34] On page 2 of Schedule 16 I used two Hamada Models including the original Hamada formula and the Harris-Pringle formula to account for the 23.7 percentage point change in common equity ratio that results from changing from market value capitalization to book value capitalization. The results of the application of the original Hamada formula and the Harris-Pringle formula determine a range of adjustment of 0.75% to 1.20%, and average 0.98%. The details of the application of the two Hamada models are shown on page 2 of Schedule 16.

For example, the inputs to the original Hamada formula for the Water Group market value capitalization consist of their raw leveraged beta of 0.66, debt ratio of 26.2%, preferred stock ratio of 0.0%, common equity ratio of 73.8% and combined tax rate of 27.87%. The group's unleveraged beta is determined to be 0.53 through the use of the following original Hamada formula:

$$Bl = Bu\ (1 + (1 - t)\ D/E + P/E)$$

where:

Bl = observed, leveraged beta
Bu = calculated, unleveraged beta
t = income tax rate
D = debt ratio
P = preferred stock ratio
E = common equity ratio

Applying the unleveraged beta of 0.53 along with the Water Group's book value capitalization ratios of 49.8% long-term debt, 0.1% preferred stock and 50.1%

34 "Hamada's Equation," Corporate Finance Institute. Accessed 3/14/23. https://corporatefinanceinstitute.com/resources/valuation/hamadas-equation/.

common equity and combined tax rate of 27.87% results in a leveraged beta of 0.90 applicable to the group's book value capitalization. Based upon the Water Group's risk premium of 5.0% and the difference between Water Group's market value leveraged beta, their book value leveraged beta of 0.24 (0.90 - 0.66) indicates that the Water Group's common equity cost rate must be increased by 1.20 (0.24 x 5.0 = 1.20) in recognition of their book value's exposure to more financial risk.

The inputs to the Harris-Pringle formula for the Water Group market value capitalization consist of their raw leveraged beta of 0.66, debt ratio of 26.2%, preferred stock ratio of 0.0%, common equity ratio of 73.8% and debt beta of 0.34. The group's unleveraged beta is determined to be 0.58 through the use of the following Harris-Pringle formula:

$$Bl = Bu + (Bu - Bd)(D/E)$$

where:

Bl = observed, leveraged beta
Bu = calculated, unleveraged beta
Bd = debt beta
D = debt ratio
P = preferred stock ratio
E = common equity ratio

Applying the unleveraged beta of 0.58 along with the Water Group's book value capitalization ratios of 49.8% long-term debt, 0.1% preferred stock and 50.1% common equity and debt beta of 0.34 results in a leveraged beta of 0.81 applicable to the group's book value capitalization. Based upon the Water Group's risk premium of 5.0% and the difference between Water Group's market value leveraged beta, their book value leveraged beta of 0.15 (0.81 - 0.66) indicates that

the Water Group's common equity cost rate must be increased by 0.75 (0.15 x 5.0 = 0.75) in recognition of their book value's exposure to more financial risk.

Q. Is there another way to reflect the financial risk difference that exists as a result of market capitalization ratios being significantly different from book value capitalization ratios?

A. Yes, generally speaking. Although it is possible to know the direction of a financial risk adjustment on common equity cost rate, a specific quantification of financial risk differences is very difficult. Although the end result of a financial risk adjustment is very subjective and specific quantification very difficult, the direction of the adjustment is clearly known. However, hypothetically if the Comparable Group's debt were rated based on market value debt ratios they would command an Aaa rating. The Comparison Group currently has bonds rated A based upon their book value debt ratios. The yield spread on a bond rated Aaa versus A rated bonds averages about 65 basis points or 0.65% as shown on page 3 of Schedule 16.

The result of the original Hamada formula indicates an adjustment of 1.20%, the Harris-Pringle formula indicates an adjustment of 0.75%, and the bond yield spread approach indicates an adjustment of 0.65%. Based on the results of these three approaches, I believe the Water Group's market value common equity cost rate should be adjusted upward by at least 0.80% (0.98% hamada est. + 0.65% yield spread = 1.63% ÷ 2 = 0.8%) since it is going to be applied to a book value equity ratio that is 23.7 percentage points less than the market value equity ratio.

Accounting for the increased amount of leverage between market value derived DCF cost rates and book value cost rates indicates a book value DCF cost rate of 9.70% for the Water Group (8.9% + 0.8% = 9.70%).

CAPITAL ASSET PRICING MODEL

Q. Please briefly describe the theory of the capital asset pricing model.

A. The CAPM is based upon the assumption that investors hold diversified portfolios and that the market only recognizes or rewards non-diversifiable (or systematic) risk when determining the price of a security because company-specific risk (or non-systematic) is removed through diversification. Further, investors are assumed to require additional or higher returns for assuming additional or higher risk. This assumption is captured by using a beta that provides an incremental cost of additional risk above the base risk-free rate available to investors. The beta of a security reflects the market risk or systematic risk of the security relative to the market. The beta for the market is always equal to 1.00; therefore, a company whose stock has a beta greater than 1.00 is considered riskier than the market, and a company with a beta less than 1.00 is considered less risky than the market. The base risk-free rate is assumed to be a U.S. Government treasury security because they are assumed to be free of default risk.

Q. What risk-free rate and beta have you used in your CAPM calculation?

A. The risk-free rate used in CAPM should have approximately the same maturity as the life of the asset for which the cost rate is being determined. Because utility assets are long-lived, a long-term Treasury Bond yield serves as an appropriate proxy. Previously, I estimated an appropriate risk-free rate of 3.8% based upon the

recent and forward long-term Treasury yields. I used the average beta of 0.79 for the Water Group as shown on page 1 of Schedule 17. However, as stated previously, the Comparable Group's betas are understated due to their small size which affects their stock price changes.

Q. After developing an appropriate beta and risk-free rate, what else is necessary to calculate a CAPM derived cost rate?

A. A market premium is necessary to determine a traditional CAPM derived cost rate. The market return rate is the return expected for the entire market. The market premium is then multiplied by the company specific beta to capture the incremental cost of additional risk (market premium) above the base risk-free rate (long-term treasury securities) to develop a risk adjusted market premium. For example, if you conclude that the expected return on the market as a whole is 15% and further assume that the risk-free rate is 8%, then the market premium is shown to be 7% (15% - 8% = 7%).

Further, assume there are two companies, one of which is considered less risky than the market, and therefore has a beta of less than 1.00 or 0.80. The second company has a beta that is greater than 1.00 or 1.20, and is therefore considered riskier than the market. By multiplying the hypothetical 7.0% market premium by the respective betas of 0.80 and 1.20, risk adjusted market premiums of 5.6% (7.0% x 0.80) and 8.4% (7.0% x 1.20) are shown for the company considered less risky than the market and for the company considered riskier than the market, respectively.

Adding the assumed risk-free rate of 8% to the risk adjusted market premiums results in the CAPM derived cost rates of 13.6% (5.6% + 8.0%) for the less risky company and 16.4% (8.4% + 8.0%) for the company considered of greater risk than the market. In fact, the result of this hypothetical CAPM calculation shows that: (1) the least risky company, with the beta of 0.80, has a cost rate of 13.6%; (2) the market, with the beta of 1.00, has a cost rate of 15.0%; and (3) that the higher risk company, with a beta of 1.20, has a cost rate of 16.4%.

Q. How did you develop a market premium for your CAPM?

A. The average projected market premium of 11.1% is developed on page 2 of Schedule 17. It is based upon Value Line's average projected total market return for the next three to five years of 14.9% less the risk free rate of 3.8%. I also reviewed market premiums derived from Ibbotson Associates' most recent publication concerning asset returns that show a market premium of 7.5%. The Ibbotson Associates' market premium may be on the low side reflective of the higher interest rate environment found during their study (*i.e.,* 5.0%). The Value Line market premium reflects the Federal Reserve's current artificial interest rate levels while the Ibbotson Associates' market premiums reflect a higher interest rate environment.

Q. How did you adjust for the impact that size has on the Comparable Group's beta?

A. The adjustment is reflected in the CAPM size premium. The CAPM size premium is developed on page 4 of Schedule 17. The size premium reflects the risks associated with the Comparable Group's small size and its impact on the

determination of their beta. This adjustment is necessary because beta (systematic risk) does not capture or reflect the Comparable Group's small size. I reduced the size premium by the ratio of the Comparison Group's beta to their respective market quartile's beta.

Q. What is the comparison group's market cost of equity based upon your CAPM calculation?

A. The CAPM based on Ibbotson Associates' historical market returns shows a market cost rate of 11.5% for the Water Group. The CAPM based on Value Line's projected market returns shows a 14.4% for the Water Group, as shown on page 1 of Schedule 17. The Comparable Group's market value CAPM of 11.5% is based 100% on the results of the historical market returns and 0% on the projected market returns. Adjusting the market value CAPM based upon the end result of the application of the Hamada Model and the bond yield spread to account for the difference in leverage between market value capitalization ratios and book value ratios discussed previously indicates a cost rate of 12.3% for the Water Group applicable to book value (11.5% + 0.8% = 12.3%).

RISK PREMIUM

Q. What is a risk premium?

A. A risk premium is the common equity investors' required premium over the long-term debt cost rate for the same company, in recognition of the added risk to which the common stockholder is exposed versus long-term debtholders. Long-term debtholders have a stated contract concerning the receipt of dividend and principal repayment whereas common stock investors do not. Further, long-term debtholders

have the first claim on assets in case of bankruptcy. A risk premium recognizes the higher risk to which a common stock investor is exposed. The risk premium-derived cost rate for common equity is the simplest form of deriving the cost rate for common equity because it is nothing more than a premium above the prospective level of long-term corporate debt.

Q. What is the appropriate estimated future long-term borrowing rate for the Comparable Companies?

A. The estimated near term long-term borrowing rate for the Comparable Companies is 5.4% based upon their credit profile that supports an A bond rating.

Q. What is the appropriate risk premium to be added to the future long-term borrowing rate?

A. To determine a common equity cost rate, it is necessary to estimate a risk premium to be added to the Comparable Group's prospective long-term debt rate. Investors may rely upon published projected premiums; they also rely upon their experiences of investing in ultimately determining a probabilistic forecasted risk premium.

Projections of total market returns are shown on page 9 of Schedule 18. A projected risk premium for the market can be derived by subtracting the debt cost rate from the projected market return as shown on page 9 of Schedule 18. However, the derived risk premium for the market is not directly applicable to the Comparable Companies because they are less risky than the market. The use of 90% of the market's risk is a conservative estimation of their level of risk as compared to the market.

The midpoint of the risk premium range is 9.1% and the average for the most recent quarter is 8.7% as shown on page 9 of Schedule 18. Based on this, a reasonable estimate of a longer term projected risk premium is 8.7%.

Q. How do investors' experiences affect their determination of a risk premium?

A. Returns on various assets are studied to determine a probabilistic risk premium. The most noted asset return studies and resultant risk premium studies are those performed by Ibbotson Associates. However, Ibbotson Associates has not performed asset return studies concerning public utility common stocks. Based upon Ibbotson Associates' methodology of computing asset returns, I calculated annual returns for the S&P utilities and bonds for the period 1928-2021. The resultant annual returns were then compared to determine a recent risk premium from a recent 20-year period, 2002-2021 and subsequent periods that were each increased by ten years until the entire study period was reviewed (pages 2 and 3 of Schedule 18).

A long-term analysis of rates of return is necessary because it assumes that investors' expectations are, on average, equal to realized long-run rates of return and resultant risk premium. Observing a single year's risk premium, either high or low, may not be consistent with investors' requirements. Further, studies show a mean reversion in risk premiums. In other words, over time, risk premiums revert to a longer-term average premium. Moreover, since the expected rate of return is defined as "the rate of return expected to be realized from an investment; the mean

value of the probability distribution of possible results,"[35] a long-term analysis of annual returns is appropriate.

Q. What do you conclude from the information shown on pages 2 and 3 of Schedule 18?

A. The average of the absolute range of the S&P Utilities' appropriate average risk premium (i.e., bonds rated AAA to A) was 3.8% during the seven periods studied, as calculated from page 2 of Schedule 18. The credit adjusted longer term risk premiums (i.e., bonds rated A), 1928-2021, averages 4.3%. The appropriate average (i.e., bonds rated AAA to A) longer term risk premiums, 1928-2021, have an absolute range of 4.3% to 5.2%, and averages 4.6%.

The aforementioned premiums are based on total returns for bonds; and reflect their price risk. A bond's price risk is not related to its credit quality and is eliminated when a bond is held to maturity from time of purchase. Using the income returns, page 4 of Schedule 18, for bonds eliminates price risk and better measures an investor's required return based on credit quality. The appropriate average risk premium (i.e., bonds rated AAA to A) based on income returns was 5.5% during the seven periods studied. The credit adjusted longer term risk premiums (i.e., bonds rated A), 1928-2021, averages 4.9%. The appropriate average (i.e., bonds rated AAA to A) longer term risk premiums, 1928-2021, have an absolute range of 4.9% to 5.3%, and averages 5.1%.

[35]Eugene F. Brigham, Fundamentals of Financial Management, Fifth Edition, The Dryden Press, 1989, p. 106.

Q. What information is shown on page 4 of Schedule 18?

A. Page 4 of Schedule 18 proves and measures the negative relationship between interest rate levels and the resulting risk premium. That is, risk premiums are generally higher when interest rates are low and risk premiums are generally lower when interest rates are high. This was proven by sorting the 94-year period, 1928 to 2021, annual returns based on interest rate level from lowest interest rate to highest interest rate and distributing the results into two equal groups, a 47-year low interest rate environment group and a 47-year high interest rate environment group.

During the period 1928-2021, the 47 years with the lowest interest rates had an average interest rate of 2.9% and reflected a range of interest rates from 1.4% to 4.1%. This period resembles the current interest rate environment of 3.8% discussed previously regarding the CAPM's risk free rate. The risk premium based on total returns during this low interest rate environment produced the appropriate average (i.e., bonds rated AAA to A) longer term risk premium of 6.4% and a credit adjusted longer term risk premium (i.e., bonds rated A) of 5.6%. The annual income return based risk premium during this low interest rate environment produced the appropriate average (i.e., bonds rated AAA to A) longer term risk premium of 7.5% and a credit adjusted longer term risk premium (i.e., bonds rated A) of 7.2%.

However, during the period 1928-2021, the 47 years with the highest interest rates had an average interest rate of 7.2% and reflected a range of interest rates from 4.1% to 13.5%. This period is far different from the current interest rate

environment of 3.8%. The risk premium based on total returns during the highest interest rate environment produced an average longer term risk premium of 3.0% over bonds rated AAA to A and a credit adjusted longer term risk premium (i.e., bonds rated A) of only 2.9%. The annual income return based risk premium during the highest interest rate environment produced an average longer term risk premium of 2.8% over bonds rated AAA to A and a credit adjusted longer term risk premium (i.e., bonds rated A) of only 2.7%.

Over time, risk premiums are mean reverting. They constantly move toward a long-term average reflecting a long-term level of interest rates. That is, an above-average risk premium will decrease toward a long-term average while a below-average risk premium will increase toward a long-term average. In any single year, of course, investor-required rates of return may not be realized and in certain instances, a single year's risk premiums may be negative. Negative risk premiums are not indicative of investors' expectations and violate the basic premise of finance concerning risk and return. Negative risk premiums usually occur only in the stock market's down years (*i.e.,* the years in which the stock markets' return was negative).

When interest rate levels are not considered the credit adjusted longer term risk premium (*i.e.*, bonds rated A), 1928-2021, averages 4.6%, discussed previously regarding pages 2 and 3 of Schedule 18. However, the annual income return based risk premium during the low interest rate environment produced a credit adjusted longer term risk premium (*i.e.*, bonds rated A) of 7.2%. Since this period's interest rate environment resembles the current interest rate environment of 3.8%, a

reasonable estimate of investors risk premium based on historical returns is based on a 50% weighting on the results of the entire 1928-2021 historical market returns and a 50% weighting on the results of the low interest rate environment to produce a 5.5% historical risk premium. However, I recognize that the current interest rate environment of 3.8% is close to the upper end of the low interest rate environment, which ranged from 1.4% to 4.1%, and have lowered my estimate of the risk premium to 5.0%.

Adding the risk premium of 5.0% for the Comparable Group to the prospective cost of newly-issued long-term debt of 5.4% results in a market value risk premium derived cost rate for common equity of 10.4% as reflected on page 1 of Schedule 18. Adjusting the market value risk premium based upon the end result of the application of the Hamada Model and the bond yield spread to account for the difference in leverage between market value capitalization and book value ratios discussed previously indicates a cost rate of 11.2% applicable to book value (10.4% + 0.8% = 11.2%).

SUMMARY OF COMMON EQUITY COST RATE

Q. What is your Comparable Group's common equity cost rate?

A. Based upon the results of the models employed, the Water Group's common equity cost rate is in the range of 9.7% to 12.3% as reflected on Schedule 19. Based upon this data, the common equity cost rate for the Water Group is at least 11.00%. My recommendation is based upon the Water Group's 11.00% common equity cost rate.

Q. Do you recommend a cost of common equity of 11.00% for Falls Water?

A. Yes. Based upon the financial analysis and risk analysis, I conclude that Falls Water is exposed to overall similar investment risk as the Comparable Group. This is evidenced by the factors summarized in Table 5 discussed previously.

The results of the three models employed for the Water Group show a current range of common equity cost applicable to book value of Falls Water of 9.70% (DCF), 12.30% (CAPM), and 11.20% (RP) as shown in Table 8.

Summary of the Falls Water's Equity Cost Rates	
DCF	9.70
CAPM	12.30
RP	11.20

Table 8

Q. What is your common equity cost rate recommendation for Falls Water?

A. As discussed above and as shown in Schedule 19, I recommend a 11.00% common equity cost rate for Falls Water.

Q. Have you checked the reasonableness of your recommended common equity rate for Falls Water?

A. Yes. Page 2 of Schedule 14 reflects the average projected earned return on average book common equity for the companies in the Comparable Group for the period 2025-2027, which is shown to average 10.7%. For 2021, the Comparable Group earned a return on common equity of 11.3% and earned a return on common equity of 10.5% in 2020, as shown on page 3 of Schedule 6. Given the large degree to which regulatory lag and attrition impacts water utilities earning, the range of the

comparable utilities' projected and actual earned returns suggests that my recommendation that Falls Water be permitted an opportunity to earn 11.00% is reasonable, if not conservative.

OVERALL RATE OF RETURN RECOMMENDATION

Q. What is your overall fair rate of return recommendation for the Falls Water?

A. Based upon the recommended capital structure and my estimate of the Falls Water's common equity cost rate, I recommend an overall fair rate of return of 8.12%. The details of my recommendation are shown on Schedule 1.

Q. Have you tested the reasonableness of your overall fair rate of return recommendation?

A. Yes. If my recommended overall rate of return is actually earned, it will give Falls Water ratios that will allow Falls Water to present a financial profile that will enable it to attract capital necessary to provide safe and reliable water service, at reasonable terms.

Q. Does that conclude your direct testimony?

A. Yes, it does.

APPENDIX A

Professional Qualifications
of
Harold Walker, III
Manager, Financial Studies
Gannett Fleming Valuation and Rate Consultants, LLC.

EDUCATION

Mr. Walker graduated from Pennsylvania State University in 1984 with a Bachelor of Science Degree in Finance. His studies concentrated on securities analysis and portfolio management with an emphasis on economics and quantitative business analysis. He has also completed the regulation and the rate-making process courses presented by the College of Business Administration and Economics Center for Public Utilities at New Mexico State University. Additionally, he has attended programs presented by The Institute of Chartered Financial Analysts (CFA).

Mr. Walker was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the Society of Utility and Regulatory Financial Analysts. This designation is based upon education, experience and the successful completion of a comprehensive examination. He is also a member of the Society of Utility and Regulatory Financial Analysts (SURFA) and has attended numerous financial forums sponsored by the Society. The SURFA forums are recognized by the Association for Investment Management and Research (AIMR) and the National Association of State Boards of Accountancy for continuing education credits.

Mr. Walker is also a licensed Municipal Advisor Representative (Series 50) by Municipal Securities Rulemaking Board (MSRB) and Financial Industry Regulatory Authority (FINRA).

BUSINESS EXPERIENCE

Prior to joining Gannett Fleming Valuation and Rate Consultants, LLC., Mr. Walker was employed by AUS Consultants - Utility Services. He held various positions during his eleven years with AUS, concluding his employment there as a Vice President. His duties included providing and supervising financial and economic studies on behalf of investor owned and municipally owned water, wastewater, electric, natural gas distribution and transmission, oil pipeline and telephone utilities as well as resource recovery companies.

In 1996, Mr. Walker joined Gannett Fleming Valuation and Rate Consultants, LLC. In his capacity as Manager, Financial Studies and for the past twenty years, he has continuously studied rates of return requirements for regulated firms. In this regard, he supervised the preparation of rate of return studies in connection with his testimony and in the past, for other individuals. He also assisted and/or developed dividend policy studies, nuclear prudence studies, calculated fixed charge rates for avoided costs involving cogeneration projects, financial decision studies for capital budgeting purposes and developed financial models for determining future capital requirements and the effect of those requirements on investors and ratepayers, valued utility property and common stock for acquisition and divestiture, and assisted in the private placement of fixed capital securities for public utilities.

Head, Gannett Fleming GASB 34 Task Force responsible for developing Governmental Accounting Standards Board (GASB) 34 services, and educating Gannett Fleming personnel and Gannett Fleming clients on GASB 34 and how it may affect them. The GASB 34 related services include inventory of assets, valuation of assets, salvage estimation, annual depreciation rate determination, estimation of depreciation reserve, asset service life determination, asset condition assessment, condition assessment documentation, maintenance estimate for asset preservation, establishment of condition level index, geographic information system (GIS) and data management services, management discussion and analysis (MD&A) reporting, required supplemental information (RSI) reporting, auditor interface, and GASB 34 compliance review.

Mr. Walker was also the Publisher of C.A. Turner Utility Reports from 1988 to 1996. C.A. Turner Utility Reports is a financial publication which provides financial data and related ratios and forecasts covering the utility industry. From 1993 to 1994, he became a contributing author for the Fortnightly, a utility trade journal. His column was the Financial News column and focused mainly on the natural gas industry.

In 2004, Mr. Walker was elected to serve on the Board of Directors of SURFA. Previously, he served as an ex-officio directors as an advisor to SURFA's existing President. In 2000, Mr. Walker was elected President of SURFA for the 2001-2002 term. Prior to that, he was elected to serve on the Board of Directors of SURFA during the period 1997-1998 and 1999-2000. Currently, he also serves on the Pennsylvania Municipal Authorities Association, Electric Deregulation Committee.

EXPERT TESTIMONY

Mr. Walker has submitted testimony or been deposed on various topics before regulatory commissions and courts in 26 states including: Arizona, California, Colorado, Connecticut, Delaware, Hawaii, Idaho, Illinois, Indiana, Kentucky, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, Nevada, New Jersey, New York, North Carolina, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia, and West Virginia. His testimonies covered various subjects including: fair rate of return, fair market value, the taking of natural resources, benchmarking, appropriate capital structure and fixed capital cost rates, depreciation, purchased water adjustments, synchronization of interest charges for income tax purposes, valuation, cash working capital, lead-lag studies, financial analyses of investment alternatives, and fair value. The following tabulation provides a listing of the electric power,

natural gas distribution, telephone, wastewater, and water service utility cases in which he has been involved as a witness.

Client	Docket No.
Alpena Power Company	U-10020
Armstrong Telephone Company - Northern Division	92-0884-T-42T
Armstrong Telephone Company - Northern Division	95-0571-T-42T
Artesian Water Company, Inc.	90 10
Artesian Water Company, Inc.	06 158
Aqua Illinois Consolidated Water Divisions and Consolidated Sewer Divisions	11-0436
Aqua Illinois Hawthorn Woods Wastewater Division	07 0620/07 0621/08 0067
Aqua Illinois Hawthorn Woods Water Division	07 0620/07 0621/08 0067
Aqua Illinois Kankakee Water Division	10-0194
Aqua Illinois Kankakee Water Division	14-0419
Aqua Illinois Vermilion Division	07 0620/07 0621/08 0067
Aqua Illinois Willowbrook Wastewater Division	07 0620/07 0621/08 0067
Aqua Illinois Willowbrook Water Division	07 0620/07 0621/08 0067
Aqua Pennsylvania, Inc	A-2022-3034143
Aqua Pennsylvania Wastewater Inc	A-2016-2580061
Aqua Pennsylvania Wastewater Inc	A-2017-2605434
Aqua Pennsylvania Wastewater Inc	A-2018-3001582
Aqua Pennsylvania Wastewater Inc	A-2019-3008491
Aqua Pennsylvania Wastewater Inc	A-2019-3009052
Aqua Pennsylvania Wastewater Inc	A-2019-3015173
Aqua Pennsylvania Wastewater Inc	A-2021-3024267
Aqua Pennsylvania Wastewater Inc	A-2021-3026132
Aqua Pennsylvania Wastewater Inc	A-2021-3027268
Aqua Virginia - Alpha Water Corporation	Pue-2009-00059
Aqua Virginia - Blue Ridge Utility Company, Inc.	Pue-2009-00059
Aqua Virginia - Caroline Utilities, Inc. (Wastewater)	Pue-2009-00059
Aqua Virginia - Caroline Utilities, Inc. (Water)	Pue-2009-00059
Aqua Virginia - Earlysville Forest Water Company	Pue-2009-00059

Aqua Virginia - Heritage Homes of Virginia	Pue-2009-00059
Aqua Virginia - Indian River Water Company	Pue-2009-00059
Aqua Virginia - James River Service Corp.	Pue-2009-00059
Aqua Virginia - Lake Holiday Utilities, Inc. (Wastewater)	Pue-2009-00059
Aqua Virginia - Lake Holiday Utilities, Inc. (Water)	Pue-2009-00059
Aqua Virginia - Lake Monticello Services Co. (Wastewater)	Pue-2009-00059
Aqua Virginia - Lake Monticello Services Co. (Water)	Pue-2009-00059
Aqua Virginia - Lake Shawnee	Pue-2009-00059
Aqua Virginia - Land'or Utility Company (Wastewater)	Pue-2009-00059
Aqua Virginia - Land'or Utility Company (Water)	Pue-2009-00059
Aqua Virginia - Mountainview Water Company, Inc.	Pue-2009-00059
Aqua Virginia - Powhatan Water Works, Inc.	Pue-2009-00059
Aqua Virginia - Rainbow Forest Water Corporation	Pue-2009-00059
Aqua Virginia - Shawnee Land	Pue-2009-00059
Aqua Virginia - Sydnor Water Corporation	Pue-2009-00059
Aqua Virginia - Water Distributors, Inc.	Pue-2009-00059
Atlantic City Sewerage Company	WR21071006
Berkshire Gas Company	18-40
Berkshire Gas Company	22-20
Borough of Brentwood	A-2021-3024058
Borough of Hanover	R-2009-2106908
Borough of Hanover	R-2012-2311725
Borough of Hanover	R-2014-242830
Borough of Hanover	R-2021-3026116
Borough of Hanover	P-2021-3026854
Borough of Royersford	A-2020-3019634
Butler Area Sewer Authority	A-2020-3019634
Chaparral City Water Company	W 02113a 04 0616
California-American Water Company	CIVCV156413
Connecticut-American Water Company	99-08-32
Connecticut Water Company	06 07 08
Citizens Utilities Company Colorado Gas Division	-
Citizens Utilities Company	

Vermont Electric Division	5426
Citizens Utilities Home Water Company	R 901664
Citizens Utilities Water Company of Pennsylvania	R 901663
City of Beaver Falls	A-2022-3033138
City of Bethlehem - Bureau of Water	R-00984375
City of Bethlehem - Bureau of Water	R 00072492
City of Bethlehem - Bureau of Water	R-2013-2390244
City of Bethlehem - Bureau of Water	R-2020-3020256
City of Dubois – Bureau of Water	R-2013-2350509
City of Dubois – Bureau of Water	R-2016-2554150
City of Lancaster Sewer Fund	R-00005109
City of Lancaster Sewer Fund	R-00049862
City of Lancaster Sewer Fund	R-2012-2310366
City of Lancaster Sewer Fund	R-2019-3010955
City of Lancaster Sewer Fund	R-2019-3010955
City of Lancaster Water Fund	R-00984567
City of Lancaster Water Fund	R-00016114
City of Lancaster Water Fund	R 00051167
City of Lancaster Water Fund	R-2010-2179103
City of Lancaster Water Fund	R-2014-2418872
City of Lancaster Water Fund	R-2021-3026682
City of Lancaster Water Fund	P-2022-3035591
Coastland Corporation	15-cvs-216
Consumers Pennsylvania Water Company Roaring Creek Division	R-00973869
Consumers Pennsylvania Water Company Shenango Valley Division	R-00973972
Country Knolls Water Works, Inc.	90 W 0458
East Resources, Inc. - West Virginia Utility	06 0445 G 42T
Elizabethtown Water Company	WR06030257
Forest Park, Inc.	19-W-0168 & 19-W-0269
Hampton Water Works Company	DW 99-057
Hidden Valley Utility Services, LP	R-2018-3001306
Hidden Valley Utility Services, LP	R-2018-3001307
Illinois American Water Company	16-0093
Illinois American Water Company	22-0210

Indian Rock Water Company	R-911971
Indiana Natural Gas Corporation	38891
Jamaica Water Supply Company	-
Kane Borough Authority	A-2019-3014248
Kentucky American Water Company, Inc.	2007 00134
Middlesex Water Company	WR 89030266J
Millcreek Township Water Authority	55 198 Y 00021 11
Missouri-American Water Company	WR 2000-281
Missouri-American Water Company	SR 2000-282
Missouri-American Water Company	WR-2022-0303
Mount Holly Water Company	WR06030257
Nevada Power Company d/b/a NV Energy	20-06003
New Jersey American Water Company	WR 89080702J
New Jersey American Water Company	WR 90090950J
New Jersey American Water Company	WR 03070511
New Jersey American Water Company	WR-06030257
New Jersey American Water Company	WR08010020
New Jersey American Water Company	WR10040260
New Jersey American Water Company	WR11070460
New Jersey American Water Company	WR15010035
New Jersey American Water Company	WR17090985
New Jersey American Water Company	WR19121516
New Jersey American Water Company	WR22010019
New Jersey Natural Gas Company	GR19030420
New Jersey Natural Gas Company	GR21030679
Newtown Artesian Water Company	R-911977
Newtown Artesian Water Company	R-00943157
Newtown Artesian Water Company	R-2009-2117550
Newtown Artesian Water Company	R-2011-2230259
Newtown Artesian Water Company	R-2017-2624240
Newtown Artesian Water Company	R-2019-3006904
North Maine Utilities	14-0396
Northern Indiana Fuel & Light Company	38770
Oklahoma Natural Gas Company	PUD-940000477
Palmetto Utilities, Inc.	2020-281-S
Palmetto Wastewater Reclamation, LLC	2018-82-S
Pennichuck Water Works, Inc.	DW 04 048

Pennichuck Water Works, Inc.	DW 06 073
Pennichuck Water Works, Inc.	DW 08 073
Pennsylvania Gas & Water Company (Gas)	R-891261
Pennsylvania Gas & Water Co. (Water)	R 901726
Pennsylvania Gas & Water Co. (Water)	R-911966
Pennsylvania Gas & Water Co. (Water)	R-22404
Pennsylvania Gas & Water Co. (Water)	R-00922482
Pennsylvania Gas & Water Co. (Water)	R-00932667
Philadelphia Gas Works	R-2020-3017206
Public Service Company of North Carolina, Inc.	G-5, Sub 565
Public Service Electric and Gas Company	ER181010029
Public Service Electric and Gas Company	GR18010030
Presque Isle Harbor Water Company	U-9702
Sierra Pacific Power Company d/b/a NV Energy	19-06002
Sierra Pacific Power Company d/b/a NV Energy	22-06014
St. Louis County Water Company	WR-2000-844
Suez Water Delaware, Inc.	19-0615
Suez Water Idaho, Inc.	SUZ-W-20-02
Suez Water New Jersey, Inc.	WR18050593
Suez Water New Jersey, Inc.	WR20110729
Suez Water Owego-Nichols, Inc.	17-W-0528
Suez Water Pennsylvania, Inc.	R-2018-3000834
Suez Water Pennsylvania, Inc.	A-2018-3003519
Suez Water Pennsylvania, Inc.	A-2018-3003517
Suez Water Rhode Island, Inc.	Docket No. 4800
Suez Water Owego-Nichols, Inc.	19-W-0168 & 19-W-0269
Suez Water New York, Inc.	19-W-0168 & 19-W-0269
Suez Westchester, Inc.	19-W-0168 & 19-W-0269
Town of North East Water Fund	9190
Township of Exeter	A-2018-3004933
United Water New Rochelle	W-95-W-1168
United Water Toms River	WR-95050219
Upper Pottsgrove Township	A-2020-3021460
Valley Township (water)	A-2020-3019859
Valley Township (wastewater)	A-2020-3020178
Valley Water Systems, Inc.	06 10 07
Virginia American Water Company	PUR-2018-00175

Virginia American Water Company	PUR-2021-00255
West Virginia-American Water Company	15-0676-W-42T
West Virginia-American Water Company	15-0675-S-42T
Wilmington Suburban Water Corporation	94-149
York Water Company	R-901813
York Water Company	R-922168
York Water Company	R-943053
York Water Company	R-963619
York Water Company	R-994605
York Water Company	R-00016236
Young Brothers, LLC	2019-0117

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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF FALLS WATER CO., INC. FOR THE AUTHORITY TO INCREASE ITS RATES AND CHARGES FOR WATER SERVICE IN THE STATE OF IDAHO	Case No. FLS-W-23-01

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

EXHIBIT 6 TO ACCOMPANY THE

DIRECT TESTIMONY OF HAROLD WALKER

Falls Water, Inc.
Cost of Capital and Fair Rate of Return
At December 31, 2022

Type of Capital	Ratios*	Cost Rate* (%)	Weighted Cost Rate (%)
Debt	45.00%	4.61	2.07%
Common Equity	55.00	11.00	6.05
Overall Cost of Capital	100.00%		8.12%
Before Income Tax Interest Coverage (x) (Based on effective income tax rate of 25.58%.)		4.9x	

*

	Captial	Ratio
Actual Capitalization		
Debt	$1,338,264	14%
Common Equity	8,458,450	86%
Total	$9,796,714	100%

	Captial	Ratio
Hypothetical Capitalization		
Debt	4,408,521	45%
Common Equity	5,388,193	55%
Total	$9,796,714	100%

	Captial	Cost Rate	Interest
Debt Cost Rate			
Debt - Actual	$1,338,264	2.80%	$37,458
Debt - Hypothetical	3,070,257	5.40%	165,794
Total Debt	$4,408,521	4.61%	$203,252

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H. Walker
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Capital Structure Ratios for
The Water Group Followed by Analysts
At 9/30/2022 and Estimated for 2026

	9/30/2022	Est.(1) 2026
Water Group Followed by Analysts		
Long-term Debt	49.8 %	48.3 %
Preferred Stock	0.1	0.0
Common Equity	50.1	51.7
Total	100.0 %	100.0 %

Notes: (1) Project by Value Line for the period 2025 to 2027.

Source of Information: Value Line Investment Survey, 1/06/23, and S&P Capital IQ

Case No. FLS-W-23-01
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Schedule 2
H. Walker

Capital Structure Ratios for
The Water Group Followed by Analysts
At 9/30/2022 and Estimated for 2026

	Actual at 9/30/22		
	Long-term Debt	Preferred Stock	Common Equity
Water Group Followed by Analysts			
American States Water Co	49.7	0.0	50.3
American Water Works Co Inc	59.3	0.0	40.7
California Water Service Gp	45.3	0.0	54.7
Essential Utilities, Inc.	54.4	0.0	45.6
Middlesex Water Co	43.9	0.3	55.8
SJW Corp	58.2	0.0	41.8
York Water Co	37.9	0.0	62.1
Average	49.8	0.1	50.1

	Estimated at 2026		
	Long-term Debt	Preferred Stock	Common Equity
Water Group Followed by Analysts			
American States Water Co	52.0	0.0	48.0
American Water Works Co Inc	60.0	0.0	40.0
California Water Service Gp	37.5	0.0	62.5
Essential Utilities, Inc.	53.0	0.0	47.0
Middlesex Water Co	42.0	0.5	57.5
SJW Corp	45.0	0.0	55.0
York Water Co	NA	NA	NA
Average	48.3	0.0	51.7

Source of Information: Value Line Investment Survey, 1/06/23, and S&P Capital IQ

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Schedule 2
H. Walker

Investor Provided Capital and Capital Structure Ratios for
The Water Group Followed by Analysts
At 9/30/2022

	Actual at 9/30/22			
	Invested Capital - Permanent Qtly	Long-term Debt	Preferred Stock	Common Equity
	(000s of $)			
Water Group Followed by Analysts				
American States Water Co	1,403.833	49.7	0.0	50.3
American Water Works Co Inc	19,047.000	59.3	0.0	40.7
California Water Service Gp	2,338.066	45.3	0.0	54.7
Essential Utilities, Inc.	11,706.313	54.4	0.0	45.6
Middlesex Water Co	713.535	43.9	0.3	55.8
SJW Corp	2,507.435	58.2	0.0	41.8
York Water Co	329.581	37.9	0.0	62.1
Range				
Low	329.581	37.9	0.0	40.7
High	19,047.000	59.3	0.3	62.1
Average	5,435.109	49.8	0.0	50.1
Median	2,338.066	49.7	0.0	50.3

Largest Two Companies in the Water Group (Capital > $10 Billion)				
American Water Works Co Inc	19,047.000	59.3	0.0	40.7
Essential Utilities, Inc.	11,706.313	54.4	0.0	45.6
Range				
Low	11,706.313	54.4	0.0	40.7
High	19,047.000	59.3	0.0	45.6
Average	15,376.657	56.9	0.0	**43.2**
Median	15,376.657	56.9	0.0	**43.2**

Samllest Two Companies in the Water Group (Capital <$1 Billion)				
Middlesex Water Co	713.535	43.9	0.3	55.8
York Water Co	329.581	37.9	0.0	62.1
Range				
Low	329.581	37.9	0.0	55.8
High	713.535	43.9	0.3	62.1
Average	521.558	40.9	0.2	**59.0**
Median	521.558	40.9	0.2	**59.0**

Source of Information: S&P Capital IQ

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Falls Water Company, Inc.
Five Year Analysis
2017 - 2021 (1)

Ln #		2021	2020	2019	2018	2017	Average Ann. Chg(%)	
				(Millions of $)				
	Investor Provided Capital($)							
1	Permanent Capital	7.476	5.855	4.317	3.477	3.226	23.8	
2	Short-Term Debt	0.019	0.015	0.037	0.037	0.020		
3	Total Capital	7.495	5.870	4.354	3.514	3.246	23.7	
4	Total Revenue($)	2.552	2.005	1.900	1.769	1.651	11.8	
5	Construction($)	1.325	0.446	1.140	0.517	0.419	70.0	
							Five Year Average	Average Central Values(9)
6	Effective Income Tax Rate(%)	31.4	17.2	(2.8)	0.0	0.0	9.2	5.7
	Capitalization Ratios(%)							
7	Long-Term Debt	12.2	10.3	15.8	21.9	25.9	17.2	16.6
8	Preferred Stock	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Common Equity	87.8	89.7	84.2	78.1	74.1	82.8	83.4
	Total	100.0	100.0	100.0	100.0	100.0		
10	Total Debt	12.4	10.5	16.5	22.7	26.3	17.7	17.2
11	Preferred Stock	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Common Equity	87.6	89.5	83.5	77.3	73.7	82.3	82.8
	Total	100.0	100.0	100.0	100.0	100.0		
	Rates on Average Capital(2)(%)							
13	Total Debt	3.4	3.7	3.5	3.6	6.5	4.1	3.6
14	Long-Term Debt	3.4	3.9	3.7	3.7	6.7	4.3	3.8
15	Preferred Stock	NA	NA	NA	NA	NA	NA	NA
	Coverage - Including AFC(3)(x)							
16	PreTax Interest	17.0	11.6	14.1	11.9	10.0	12.9	12.5
17	PreTax Interest + Pref. Div	17.0	11.6	14.1	11.9	10.0	12.9	12.5
18	PostTax Interest + Pref. Div	12.0	9.8	14.5	11.9	10.0	11.6	11.3
	Coverage - Excluding AFC(3)(x)							
19	PreTax Interest	17.0	11.6	14.1	11.9	10.0	12.9	12.5
20	PreTax Interest + Pref. Div	17.0	11.6	14.1	11.9	10.0	12.9	12.5
21	PostTax Interest + Pref. Div	12.0	9.8	14.5	11.9	10.0	11.6	11.3
22	GCF / Interest Coverage(4)(x)	25.7	16.5	15.7	16.1	14.1	17.6	16.1
23	Coverage of Common Dividends(5)(x)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	Construction / Avg. Tot. Capital(%)	19.8	8.7	29.0	15.3	15.3	17.6	16.8
25	NCF / Construction(6)(%)	48.5	86.6	34.3	87.2	97.3	70.8	74.1
26	AFC / Income for Common Stock	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	GCF / Avg. Tot. Debt(7)(%)	83.0	57.7	51.6	54.6	84.4	66.3	65.1
28	GCF / Permanent Capital(8)(%)	8.6	6.6	9.1	13.0	12.6	10.0	10.1

See page 3 of this Schedule for notes.

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Schedule 3
H. Walker

Falls Water Company, Inc.
Five Year Analysis
2017-2021

Notes:

(1) Based upon the achieved results for each individual company based upon the financials as originally reported.

(2) Computed by relating total debt interest, long-term debt interest and preferred dividend expense to average of beginning and ending balance of the respective capital outstanding.

(3) The coverage calculations, both including and excluding AFC, represent the number of times available earnings cover the various fixed charges.

(4) GCF or gross cash flow (sum of net income, depreciation, amortization, net deferred income taxes and investment tax credits, less AFC), plus interest charges, divided by interest charges.

(5) GCF (see note 4) less all preferred dividends which cover common dividends.

(6) The percent of GCF (see note 4) less all cash dividends which cover gross construction expenditures.

(7) GCF (see note 4) as a percentage of Permanent Capital (long-term debt, current maturities and preferred, preference and common equity).

(8) GCF (see note 4) as a percentage of average total debt.

(9) Average of the second, third and fourth quintile values.

Source of Information: Annual Reports filed with the ID PUC

Water Group Followed by Analysts
Five Year Analysis
2017 - 2021 (1)

Ln #		2021	2020	2019	2018	2017	Average Ann. Chg(%)	
				(Millions of $)				
	Investor Provided Capital($)							
1	Permanent Capital	5,153.338	4,667.439	3,933.051	3,230.128	2,836.135	16.2	
2	Short-Term Debt	120.245	278.756	162.140	171.857	188.340		
3	Total Capital	5,273.584	4,946.196	4,095.190	3,401.985	3,024.475	15.1	
4	Total Revenue($)	1,124.265	1,040.317	899.254	856.759	835.976	7.8	
5	Construction($)	511.706	488.708	414.853	386.422	357.285	9.5	
							Five Year Average	Average Central Values(9)
6	Effective Income Tax Rate(%)	7.1	8.9	13.4	14.4	32.2	15.2	13.4
	Book Capitalization Ratios(%)							
7	Long-Term Debt	51.9	51.5	49.3	46.2	45.6	48.9	49.3
8	Preferred Stock	0.0	0.0	0.1	0.1	0.1	0.1	0.1
9	Common Equity	48.1	48.4	50.6	53.7	54.3	51.0	50.6
	Total	100.0	100.0	100.0	100.0	100.0		
10	Total Debt	52.6	53.8	50.9	48.5	49.0	51.0	50.9
11	Preferred Stock	0.0	0.0	0.1	0.1	0.1	0.1	0.1
12	Common Equity	47.4	46.1	49.0	51.4	50.9	49.0	49.0
	Total	100.0	100.0	100.0	100.0	100.0		
	Rates on Average Capital(2)(%)							
13	Total Debt	3.5	3.8	4.4	5.1	4.9	4.4	4.4
14	Long-Term Debt	3.5	3.6	4.2	5.1	5.1	4.3	4.2
15	Preferred Stock	5.8	5.8	5.8	5.9	5.9	5.8	5.8
	Coverage - Including AFC(3)(x)							
16	PreTax Interest	4.2	4.0	3.6	3.7	4.8	4.1	4.0
17	PreTax Interest + Pref. Div	4.2	4.0	3.6	3.7	4.8	4.1	4.0
18	PostTax Interest + Pref. Div	3.9	3.7	3.3	3.3	3.6	3.6	3.6
	Coverage - Excluding AFC(3)(x)							
19	PreTax Interest	4.1	3.9	3.5	3.6	4.7	4.0	3.9
20	PreTax Interest + Pref. Div	4.1	3.9	3.5	3.6	4.7	4.0	3.9
21	PostTax Interest + Pref. Div	3.8	3.6	3.2	3.2	3.5	3.5	3.5
22	GCF / Interest Coverage(4)(x)	6.0	5.5	5.1	5.0	6.1	5.5	5.5
23	Coverage of Common Dividends(5)(x)	3.5	3.3	3.0	3.2	4.0	3.4	3.3
24	Construction / Avg. Tot. Capital(%)	12.0	12.9	12.8	13.6	14.4	13.1	12.9
25	NCF / Construction(6)(%)	55.5	48.9	46.7	49.2	62.0	52.5	49.2
26	AFC / Income for Common Stock	3.7	4.3	6.5	3.6	3.7	4.4	3.7
27	GCF / Avg. Tot. Debt(7)(%)	17.2	16.9	17.7	19.3	23.9	19.0	17.7
28	GCF / Permanent Capital(8)(%)	8.8	8.6	8.3	9.1	11.9	9.3	8.8

See page 2 of this Schedule for notes.

Case No. FLS-W-23-01
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Schedule 4
H. Walker

Water Group Followed by Analysts
Five Year Analysis
2017-2021

Notes:

(1) Average of the achieved results for each individual company based upon the financials as originally reported.

(2) Computed by relating total debt interest, long-term debt interest and preferred dividend expense to average of beginning and ending balance of the respective capital outstanding.

(3) The coverage calculations, both including and excluding AFC, represent the number of times available earnings cover the various fixed charges.

(4) GCF or gross cash flow (sum of net income, depreciation, amortization, net deferred income taxes and investment tax credits, less AFC), plus interest charges, divided by interest charges.

(5) GCF (see note 4) less all preferred dividends which cover common dividends.

(6) The percent of GCF (see note 4) less all cash dividends which cover gross construction expenditures.

(7) GCF (see note 4) as a percentage of Permanent Capital (long-term debt, current maturities and preferred, preference and common equity).

(8) GCF (see note 4) as a percentage of average total debt.

(9) Average of the second, third and fourth quintile values.

Source of Information: Standard & Poor's and Annual Reports

S&P Utilities
Five Year Analysis
2017 - 2021 (1)

Ln #		2021	2020	2019	2018	2017	Average Ann. Chg(%)	
				(Millions of $)				
	Investor Provided Capital($)							
1	Permanent Capital	59,039.068	54,280.519	50,697.412	45,050.361	42,898.567	8.4	
2	Short-Term Debt	1,815.962	1,408.252	1,621.474	2,223.236	1,461.341		
3	Total Capital	60,855.030	55,688.772	52,318.886	47,273.597	44,359.908	8.3	
4	Total Revenue($)	15,294.383	13,917.132	14,471.068	14,271.745	14,075.305	2.2	
5	Construction($)	6,793.353	6,330.592	6,233.700	5,465.972	5,017.795	8.0	
							Five Year Average	Average Central Values(9)
6	Effective Income Tax Rate(%)	8.6	2.9	8.8	29.7	20.0	14.0	8.8
	Book Capitalization Ratios(%)							
7	Long-Term Debt	57.4	56.9	55.7	55.8	57.2	56.6	56.9
8	Preferred Stock	0.7	0.9	0.9	0.5	0.0	0.6	0.3
9	Common Equity	41.8	42.2	43.4	43.6	42.8	42.8	42.8
	Total	100.0	100.0	100.0	100.0	100.0		
10	Total Debt	58.8	58.1	57.2	58.0	58.8	58.2	58.1
11	Preferred Stock	0.7	0.9	0.8	0.5	0.0	0.6	0.7
12	Common Equity	40.4	41.0	42.0	41.5	41.2	41.2	41.2
	Total	100.0	100.0	100.0	100.0	100.0		
	Rates on Average Capital(2)(%)							
13	Total Debt	3.5	3.9	4.3	4.2	4.1	4.0	4.1
14	Long-Term Debt	NA	NA	NA	NA	NA	NA	0.0
15	Preferred Stock	1.7	1.9	3.7	5.3	NA	3.1	1.9
	Coverage - Including AFC(3)(x)							
16	PreTax Interest	3.1	2.7	3.1	3.3	3.3	3.1	3.1
17	PreTax Interest + Pref. Div	3.1	2.7	3.1	3.2	3.3	3.1	3.1
18	PostTax Interest + Pref. Div	2.9	2.5	2.9	2.9	2.8	2.8	2.9
	Coverage - Excluding AFC(3)(x)							
19	PreTax Interest	3.0	2.7	3.1	3.2	3.2	3.0	3.1
20	PreTax Interest + Pref. Div	3.0	2.7	3.0	3.2	3.2	3.0	3.0
21	PostTax Interest + Pref. Div	2.8	2.5	2.8	2.9	2.7	2.7	2.8
22	GCF / Interest Coverage(4)(x)	5.4	4.8	5.1	5.3	5.2	5.2	5.2
23	Coverage of Common Dividends(5)(x)	3.1	3.1	4.1	3.9	3.2	3.5	3.2
24	Construction / Avg. Tot. Capital(%)	11.4	11.9	12.5	12.6	12.4	12.2	12.4
25	NCF / Construction(6)(%)	63.5	52.8	67.6	60.2	53.3	59.5	60.2
26	AFC / Income for Common Stock	2.4	13.7	5.4	3.5	4.5	5.9	4.5
27	GCF / Avg. Tot. Debt(7)(%)	14.1	14.4	16.9	17.4	17.3	16.0	16.9
28	GCF / Permanent Capital(8)(%)	8.2	8.1	9.4	10.0	9.8	9.1	9.4

See page 2 of this Schedule for notes.

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S&P Public Utilities
Five Year Analysis
2017-2021

Notes:

(1) Market value weighted achieved results for each individual company based upon the financials as originally reported.

(2) Computed by relating total debt interest, long-term debt interest and preferred dividend expense to average of beginning and ending balance of the respective capital outstanding.

(3) The coverage calculations, both including and excluding AFC, represent the number of times available earnings cover the various fixed charges.

(4) GCF or gross cash flow (sum of net income, depreciation, amortization, net deferred income taxes and investment tax credits, less AFC), plus interest charges, divided by interest charges.

(5) GCF (see note 4) less all preferred dividends which cover common dividends.

(6) The percent of GCF (see note 4) less all cash dividends which cover gross construction expenditures.

(7) GCF (see note 4) as a percentage of Permanent Capital (long-term debt, current maturities and preferred, preference and common equity).

(8) GCF (see note 4) as a percentage of average total debt.

(9) Average of the second, third and fourth quintile values.

Source of Information: Standard & Poor's, Moody's and Annual Reports

Risk Measures for the Common Stock of
The Water Group Followed by Analysts and the S&P Utilities

	Recent S&P Issuer Credit Rating	Stock Exchange	Recent S&P Quality Ranking	Value Line Beta	Recent Market Value 2/28/23 (Mill $)	Market Quartile	Market Quartile Name
Water Group Followed by Analysts							
American States Water Co	A+	NYSE	High (A)	0.65	3,300.608	2	Mid-Cap
American Water Works Co Inc	A	NYSE	High (A)	0.90	25,544.461	1	Large-Cap
California Water Service Gp	A+	NYSE	Above Average (A-)	0.70	3,138.126	2	Mid-Cap
Essential Utilities, Inc.	A	NYSE	High (A)	0.95	11,220.803	2	Mid-Cap
Middlesex Water Co	A	NasdaqGS	High (A)	0.70	1,349.353	3	Low-Cap
SJW Corp	A-	NYSE	Average (B+)	0.80	2,357.912	3	Low-Cap
York Water Co	A-	NasdaqGS	High (A)	0.80	620.734	3	Low-Cap
Average	A		High (A)	0.79	3,138.126	2	Mid-Cap
S&P Public Utilities							
AES Corporation (The)	BBB-	NYSE	Lower (B-)	1.05	16,504.589	1	Large-Cap
Alliant Energy Corporation	A-	NasdaqGS	High (A)	0.80	12,875.821	2	Mid-Cap
Ameren Corporation	BBB+	NYSE	Above Average (A-)	0.80	21,672.399	1	Large-Cap
American Electric Power Company, Inc	A-	NasdaqGS	Above Average (A-)	0.75	45,204.799	1	Large-Cap
American Water Works Company, Inc.	A	NYSE	High (A)	0.85	25,544.461	1	Large-Cap
Atmos Energy Corporation	A-	NYSE	High (A)	0.80	16,150.164	1	Large-Cap
CenterPoint Energy, Inc.	BBB+	NYSE	Average (B+)	1.15	17,520.722	1	Large-Cap
CMS Energy Corporation	BBB+	NYSE	High (A)	0.75	17,195.671	1	Large-Cap
Consolidated Edison, Inc.	A-	NYSE	Average (B+)	0.75	31,723.273	1	Large-Cap
Consolidated Edison, Inc.	A-	NYSE	NA	0.75	31,723.273	1	Large-Cap
Dominion Energy, Inc.	BBB+	NYSE	Below Average (B)	0.80	46,453.469	1	Large-Cap
DTE Energy Company	BBB+	NYSE	Above Average (A-)	0.95	22,566.093	1	Large-Cap
Duke Energy Corporation	BBB+	NYSE	Average (B+)	0.85	72,587.768	1	Large-Cap
Edison International	BBB	NYSE	Below Average (B)	0.95	25,329.726	1	Large-Cap
Entergy Corporation	BBB+	NYSE	Below Average (B)	0.90	21,746.336	1	Large-Cap
Evergy, Inc.	A-	NasdaqGS	Above Average (A-)	0.90	13,500.898	1	Large-Cap
Eversource Energy	A-	NYSE	High (A)	0.90	26,261.711	1	Large-Cap
Exelon Corporation	BBB+	NasdaqGS	Below Average (B)	NMF	40,152.787	1	Large-Cap
FirstEnergy Corp.	BBB-	NYSE	Below Average (B)	0.80	22,626.575	1	Large-Cap
NextEra Energy, Inc.	A-	NYSE	Above Average (A-)	0.90	141,171.792	1	Large-Cap
NiSource Inc.	BBB+	NYSE	Below Average (B)	0.85	11,315.093	2	Mid-Cap
NRG Energy, Inc.	BB	NYSE	Below Average (B)	1.10	7,534.297	2	Mid-Cap
Pinnacle West Capital Corporation	BBB+	NYSE	High (A)	0.90	8,336.170	2	Mid-Cap
PPL Corporation	A-	NYSE	Below Average (B)	1.10	19,941.870	1	Large-Cap
Public Service Enterprise Group Incorp	BBB+	NYSE	Average (B+)	0.90	30,140.666	1	Large-Cap
Sempra Energy	BBB+	NYSE	Average (B+)	0.95	47,172.845	1	Large-Cap
Southern Co (The)	BBB+	NYSE	Average (B+)	0.90	68,666.533	1	Large-Cap
WEC Energy Group, Inc.	A-	NYSE	High (A)	0.80	27,966.426	1	Large-Cap
Xcel Energy Inc.	A-	NasdaqGS	High (A)	0.80	35,503.694	1	Large-Cap
Average	BBB+		Average (B+)	0.88	25,329.726	1	Large-Cap

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Comparative Ratios
For Falls Water Company, Inc.,
For the Water Group Followed by Analysts,
S&P Utilities, and S&P 500
For the Years 2017-2021(1)

	2021	2020	2019	2018	2017	Five Year Average
Return on Common Equity(2)						
Falls Water Company, Inc.	4.8	4.9	11.3	12.7	12.5	9.2
Water Group Followed by Analysts	11.3	10.5	9.5	10.1	11.4	10.6
S&P Utilities	8.7	8.1	30.0	11.5	9.9	13.6
S&P 500	20.5	10.3	15.8	15.9	14.0	15.3
Market/Book Multiple(3)						
Water Group Followed by Analysts	3.6	3.3	3.4	3.1	3.1	3.3
S&P Utilities	2.6	2.3	2.6	1.8	2.2	2.3
S&P 500	4.4	3.3	3.2	3.2	3.1	3.2
Earnings/Price Ratio(4)						
Water Group Followed by Analysts	3.1	3.2	2.7	3.3	3.7	3.2
S&P Utilities	3.9	3.9	5.0	5.2	4.8	4.6
S&P 500	4.7	3.2	4.9	5.1	4.5	4.5
Dividend Payout Ratio(5)						
Falls Water Company, Inc.	0.0	0.0	0.0	0.0	0.0	0.0
Water Group Followed by Analysts	53.7	57.4	73.2	60.5	54.7	59.9
S&P Utilities	225.8	104.9	101.3	59.9	84.1	115.2
S&P 500	30.2	60.4	42.0	40.4	43.8	43.4
Dividend Yield(6)						
Water Group Followed by Analysts	1.7	1.8	1.8	2.0	1.9	1.8
S&P Utilities	3.2	3.5	3.4	3.7	3.5	3.5
S&P 500	1.4	1.9	2.1	2.0	2.0	1.9

See next page for Notes.

Comparative Ratios For
Falls Water Company, Inc.,
The Water Group Followed by Analysts,
The S&P Utilities, and the S&P 500
For the Years 2017-2021 (1)

Notes:

(1) The average of the achieved results for the companies in each group. The information for the S&P Public Utilities is market weighted. The information for the S&P 500 is based upon per share information adjusted to price index level.

(2) Rate of Return on Average Book Common Equity - income available for common equity divided by average beginning and ending year's balance of book common equity.

(3) Market/Book Ratio - average of yearly high-low market price divided by the average of beginning and ending year's book value per share.

(4) Earnings/Price Ratio - reported earnings per share yearly divided by the average of yearly high-low market price.

(5) Dividend Payout Ratio is computed by dividing the yearly reported dividends paid by the yearly income available for common equity.

(6) Dividend Yield - yearly dividend per share divided by the average yearly high-low market price.

Source of Information: Standard & Poor's and Annual Reports

Capital Intensity and Capital Recovery
Falls Water Company, Inc.
The Water Group Followed by Analysts, and S&P Utilities
For the Year 2021

	Capital Intensity	Rate of Capital Recovery	Capital Recovery Years
Falls Water Company, Inc.	$3.91	2.80%	35.7
Water Group Followed by Analysts	$6.60	2.19%	46.6
S&P Utilities	$4.78	3.79%	32.1

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Relative Size of
Falls Water Company, Inc.
Versus the Water Group Followed by Analysts
For the Year 2021

	Falls Water Company, Inc.	Water Group Followed by Analysts	Water Group Followed by Analysts Vs. Falls Water Company, Inc.
Total Capitalization (000's)	$7,476	$5,153,000	689.3 x
Total Operating Revenues (000's)	$2,552	$1,124,000	440.4 x
Number of Customers	6,940	968,228	139.5 x

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Institutional Holdings, Insider Holdings and Percentage of Shares Traded Annually for
The Water Group Followed by Analysts, and the S&P Utilities

	Water Group Followed by Analysts	S&P Public Utilities
Percentage of common shares held by insiders (1)	2.5%	0.3%
Percentage of common shares held by institutions (2)	71%	80%
Percentage of Common Shares Traded in 2020	121%	179%
Percentage of Common Shares Traded in 2021	112%	149%
Average Number of Months For All Common Shares to Turnover (3)	11.4	7.7

Notes: (1) An insider is a director or an officer who has a policy-making role or a person who is directly or indirectly the beneficial owner of more than 10% of a certain company's stock. An insider may be either an individual or a corporation. Insiders are required to disclose their purchase/sale transactions to the SEC in which a change in beneficial ownership has occurred. The filings must be submitted before the end of the second business day following the day on which the transaction had been executed.

(2) Institutional holders are those investment managers having a fair market value of equity assets under management of $100 million or more. Certain banks, insurance companies, investment advisers, investment companies, foundations and pension funds are included in this category.

(3) Based on average turnover (shares traded) over the past five years.

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Bond and Credit Ratings for
Falls Water Company, Inc., NW Natural Water Company, LLC and
The Water Group Followed by Analysts

	S&P Credit Rating
Falls Water Company, Inc.	NA
NW Natural Water Company, LLC	NA
Water Group Followed by Analysts	
American States Water Co	A+
American Water Works Co Inc	A
California Water Service Gp *	A+
Essential Utilities, Inc.	A
Middlesex Water Co	A
SJW Corp	A-
York Water Co	A-
Average	A

* - The A+ bond rating is that for California Water Service, Inc.

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Comparison of Credit Measures of Financial Risk
Falls Water Company, Inc. and
For the Water Group Followed by Analysts(1)

		Spot in Credit Measures of Financial Risk (For the Year 2021)			Trend in Credit Measures of Financial Risk (Five-Year Average 2017-21)		
		Credit Implication	Subject Company	Water Group Followed by Analysts	Credit Implication	Subject Company	Water Group Followed by Analysts
1.	Base Credit Metrics						
2.	PreTax Interest Coverage(2)(x)	Higher	17.0x	4.1x	Higher	12.9x	4.0x
3.	Total Debt/Total Capital(%)	Higher	12.4%	52.6%	Higher	17.7%	51.0%
4.	GCF / Interest Coverage(3)(x)	Higher	25.7x	6.0x	Higher	17.6x	5.5x
5.	GCF / Average Total Debt(4)(%)	Higher	83.0%	17.2%	Higher	66.3%	19.0%
6.	NCF / Construction(5)(%)	Lower	48.5%	55.5%	Higher	70.8%	52.5%
7.	Construction / Average Total Capital(6)(%)	Lower	19.8%	11.6%	Lower	17.6%	12.5%
8.	Standard & Poor's Credit Metrics						
9.	Funds from Operation / Average Total Debt(7)(%)	Higher	83.0%	15.6%	Higher	66.3%	18.5%
10.	Average Total Debt / EBITDA(8)(x)	Higher	1.1x	5.4x	Higher	1.3x	4.5x
11.	FFO / Interest Coverage(9)(x)	Higher	25.7x	5.5x	Higher	17.6x	5.4x
12.	EBITDA / Interest(10)(x)	Higher	27.7x	5.7x	Higher	19.5x	5.6x
13.	CFO / Average Total Debt(11)(%)	Higher	93.2%	17.2%	Higher	77.2%	19.0%
14.	FOCF / Average Total Debt(12)(%)	Lower	-77.8%	-5.3%	Lower	-30.3%	-6.2%
15.	DCF / Average Total Debt(13)(%)	Lower	-77.8%	-10.5%	Lower	-30.3%	-12.3%
16.	Moody's Credit Metrics						
17.	Cash Flow Interest Coverage(3) (x)	Higher	25.7x	6.0x	Higher	17.6x	5.5x
18.	Cash Flow / Average Total Debt(4)(%)	Higher	83.0%	17.2%	Higher	66.3%	19.0%
19.	Retained Cash Flow / Average Total Debt(14)(%)	Higher	83.0%	11.9%	Higher	66.4%	13.0%
20.	Average Total Debt / Average Adjusted Total Capital(15)(%)	Higher	11.6%	47.6%	Higher	17.2%	44.7%
21.	Capital Credit Metrics						
22.	Standard & Poor's Credit Metrics - Adjusted to Total Capital						
23.	Funds from Operation / Average Total Capital(16)(%)	Higher	9.6%	8.1%	Higher	11.1%	9.1%
24.	Average Total Capital / EBITDA(17)(x)	Higher	9.3x	10.1x	Higher	8.1x	8.8x
25.	CFO / Average Total Capital(18)(%)	Higher	10.8%	9.0%	Higher	12.8%	9.4%
26.	FOCF / Average Total Capital(19)(%)	Lower	-9.0%	-2.6%	Lower	-4.8%	-3.1%
27.	DCF / Average Total Capital(20)(%)	Lower	-9.0%	-5.3%	Higher	-4.8%	-6.0%
28.	Moody's Credit Metrics - Adjusted to Total Capital						
29.	Cash Flow / Average Total Capital(21)(%)	Higher	9.6%	9.0%	Higher	11.1%	9.4%
30.	Retained Cash Flow / Average Total Capital(22)(%)	Higher	9.6%	6.3%	Higher	11.1%	6.5%

See the next page for notes.

Comparison of Credit Market Financial Risk Metrics
For Falls Water Company, Inc. and
The Water Group Followed by Analysts
2017 - 2021

Notes:

(1) Average of the achieved results for each individual company based upon the financials as originally reported.
(2) Represents the number of times available pretax earnings ("EBIT"), excluding AFC, cover all interest charges.
(3) GCF or gross cash flow (sum of net income, depreciation, amortization, net deferred income taxes and investment tax credits, less AFC), plus interest charges, divided by interest charges.
(4) GCF (see note 3) as a percentage of average total debt.
(5) The percent of GCF (see note 3) less all cash dividends which cover gross construction expenditures.
(6) Construction expenditures as a percentage of average total capital.
(7) Funds from operations ("FFO"), revenue minus operating expenses, plus depreciation and amortization expenses ("EBITDA") less net interest expense less current tax expense, as a percentage of average total debt.
(8) Average total debt divided by EBITDA (see note 7).
(9) FFO (see note 7) plus interest charges, divided by interest charges.
(10) EBITDA (see note 7) divided by interest charges.
(11) Cash flow from operations ("CFO"), GCF (see note 3) plus changes in operating assets and liabilities (working capital), as a percentage of average total debt.
(12) Free operating cash flow ("FOCF"), CFO (see note 11) minus capital expenditures, as a percentage of average total debt.
(13) Discretionary cash flow ("DCF"), FOCF (see note 12) minus cash dividends as a percentage of average total debt.
(14) The percent of GCF (see note 3) less all cash dividends as a percentage of average total debt.
(15) Average total debt divided by average of total capital plus deferred taxes (balance sheet).
(16) Funds from operations ("FFO"), revenue minus operating expenses, plus depreciation and amortization expenses ("EBITDA") less net interest expense less current tax expense, as a percentage of average total capital.
(17) Average total capital divided by EBITDA (see note 7).
(18) Cash flow from operations ("CFO"), GCF (see note 3) plus changes in operating assets and liabilities (working capital), as a percentage of average total capital.
(19) Free operating cash flow ("FOCF"), CFO (see note 11) minus capital expenditures, as a percentage of average total capital.
(20) Discretionary cash flow ("DCF"), FOCF (see note 12) minus cash dividends as a percentage of average total capital.
(21) GCF (see note 3) as a percentage of average total capital.
(22) The percent of GCF (see note 3) less all cash dividends as a percentage of average total capital.

Source of Information: Standard & Poor's, Moody's and Annual Reports

Distribution of Bond and Credit Ratings for
All Companies Contained in S&P's *Capital IQ* Database (1)

Number of Companies In Each Grouping	S&P Bond and Credit Ratings				Range of Reported Permanent Capital By Groupings (Million $)		
	Average	Median	Maximum	Minimum	Smallest	Average	Largest
100	B+	B	AA-	CCC-	78.800	544.473	825.300
100	B+	B+	AA-	CCC+	828.900	1,083.605	1,372.900
100	BB	BB-	AA-	CCC+	1,373.800	1,626.344	1,863.900
100	BB	BB-	A+	CCC+	1,874.200	2,209.218	2,529.800
100	BB+	BB	AA+	CCC+	2,530.100	2,924.806	3,367.400
100	BB+	BB+	AA-	CC	3,371.400	3,793.940	4,230.600
100	BB+	BB+	AA	CCC+	4,232.100	4,783.777	5,428.900
100	BBB-	BBB-	A+	B-	5,434.200	6,113.916	6,972.000
100	BBB-	BBB-	AA+	CCC+	6,982.400	7,883.185	8,827.900
100	BBB	BBB	AA-	CCC+	8,827.900	10,215.632	11,612.000
100	BBB	BBB	AA-	B-	11,643.000	13,737.919	16,636.600
100	BBB	BBB+	AA-	CCC-	16,681.000	19,887.954	24,031.000
100	BBB+	BBB+	AA+	B	24,061.000	30,156.292	38,223.000
100	BBB+	A-	AA+	B-	38,230.000	59,444.273	95,309.000
40	A	A-	AAA	BB-	98,614.000	170,069.678	375,831.000
Total 1,440							

Number of Companies In Each Grouping	Range of Reported Permanent Capital By Groupings (Million $)			Distribution of S&P Bond and Credit Ratings By Size Grouping							
	Smallest	Average	Largest	AAA	AA	A	BBB	BB	B	CCC	CC
100	78.800	544.473	825.300	0%	1%	6%	3%	8%	74%	8%	0%
100	828.900	1,083.605	1,372.900	0%	1%	4%	3%	28%	60%	4%	0%
100	1,373.800	1,626.344	1,863.900	0%	2%	7%	17%	34%	36%	4%	0%
100	1,874.200	2,209.218	2,529.800	0%	0%	5%	22%	44%	28%	1%	0%
100	2,530.100	2,924.806	3,367.400	0%	4%	7%	26%	36%	25%	2%	0%
100	3,371.400	3,793.940	4,230.600	0%	1%	13%	30%	39%	13%	3%	1%
100	4,232.100	4,783.777	5,428.900	0%	1%	12%	35%	30%	21%	1%	0%
100	5,434.200	6,113.916	6,972.000	0%	0%	17%	42%	32%	9%	0%	0%
100	6,982.400	7,883.185	8,827.900	0%	2%	11%	47%	29%	10%	1%	0%
100	8,827.900	10,215.632	11,612.000	0%	3%	24%	46%	19%	7%	1%	0%
100	11,643.000	13,737.919	16,636.600	0%	3%	21%	53%	18%	5%	0%	0%
100	16,681.000	19,887.954	24,031.000	0%	2%	32%	47%	12%	4%	3%	0%
100	24,061.000	30,156.292	38,223.000	0%	3%	37%	49%	7%	4%	0%	0%
100	38,230.000	59,444.273	95,309.000	0%	14%	37%	37%	7%	5%	0%	0%
40	98,614.000	170,069.678	375,831.000	5%	20%	38%	28%	10%	0%	0%	0%
1,440											

Note: (1) Includes all non-financial public and private companies located in the US that are contained in S&P's *Capital IQ* Database that have a S&P bond or credit ratings of CC or higher and reported permanent capital for the year 2021 (as of 8/12/22). Companies were sorted based on amount of reported permanent capital and then separated into groups of 100 companies from smallest to largest.

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Interest Rate Trends for
Investor-Owned Public Utility Bonds
Yearly for 2017-2021, Monthly for the Years 2022 and 2023

	Years	Aaa Rated	Aa Rated	A Rated	Baa Rated
	2017	NA	3.82	4.00	4.38
	2018	NA	4.09	4.25	4.67
	2019	NA	3.61	3.77	4.19
	2020	NA	2.79	3.02	3.39
	2021	NA	2.97	3.11	3.36
	Average	NA	3.46	3.63	4.00
Jan	2022	NA	3.19	3.33	3.57
Feb	2022	NA	3.56	3.68	3.95
Mar	2022	NA	3.81	3.98	4.28
Apr	2022	NA	4.10	4.32	4.61
May	2022	NA	4.55	4.75	5.07
Jun	2022	NA	4.65	4.86	5.22
Jul	2022	NA	4.57	4.78	5.15
Aug	2022	NA	4.54	4.76	5.09
Sep	2022	NA	5.08	5.28	5.61
Oct	2022	NA	5.68	5.88	6.18
Nov	2022	NA	5.54	5.75	6.05
Dec	2022	NA	5.06	5.28	5.57
Avg	2022	NA	4.53	4.72	5.03
Jan	2023	NA	4.98	5.20	5.49
Feb	2023	NA	5.12	5.29	5.54

Source of Information: MERGENT BOND RECORD

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Credit Risk Spreads of
Investor-Owned Public Utility Bonds
Yearly for 2017-2021, Monthly for the Years 2022 and 2023

	Years	Aa Over Aaa	A Over Aa	Baa Over A	Baa Over Aaa
	2017	NA	0.18	0.38	NA
	2018	NA	0.16	0.42	NA
	2019	NA	0.16	0.42	NA
	2020	NA	0.23	0.37	NA
	2021	NA	0.14	0.25	NA
	Average	NA	0.17	0.37	NA
Jan	2022	NA	0.14	0.24	NA
Feb	2022	NA	0.12	0.27	NA
Mar	2022	NA	0.17	0.30	NA
Apr	2022	NA	0.22	0.29	NA
May	2022	NA	0.20	0.32	NA
Jun	2022	NA	0.21	0.36	NA
Jul	2022	NA	0.21	0.37	NA
Aug	2022	NA	0.22	0.33	NA
Sep	2022	NA	0.20	0.33	NA
Oct	2022	NA	0.20	0.30	NA
Nov	2022	NA	0.21	0.30	NA
Dec	2022	NA	0.22	0.29	NA
Avg	2022	NA	0.19	0.31	NA
Jan	2023	NA	0.22	0.29	NA
Feb	2023	NA	0.17	0.25	NA

Source of Information: MERGENT BOND RECORD

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Interest Rate Trends
Of Long-Term Treasury Constant
Yearly for 2017-2021, Monthly for the Years 2022 and 2023

	Years	10-Year T-Bond	20-Year T-Bond	30-Year T-Bond	Long-term T-Bond Yield
	2017	2.33	2.65	2.90	2.63
	2018	2.91	3.02	3.11	3.01
	2019	2.14	2.40	2.58	2.37
	2020	0.89	1.35	1.56	1.27
	2021	1.44	1.98	2.05	1.98
	Average	1.94	2.28	2.44	2.25
Jan	2022	1.76	2.15	2.10	2.13
Feb	2022	1.93	2.31	2.25	2.28
Mar	2022	2.13	2.51	2.41	2.46
Apr	2022	2.75	2.99	2.81	2.90
May	2022	2.90	3.26	3.07	3.17
Jun	2022	3.14	3.48	3.25	3.37
Jul	2022	2.90	3.35	3.10	3.23
Aug	2022	2.90	3.35	3.13	3.24
Sep	2022	3.52	3.82	3.56	3.69
Oct	2022	3.98	4.28	4.04	4.16
Nov	2022	3.89	4.22	4.00	4.11
Dec	2022	3.62	3.87	3.66	3.77
Avg	2022	2.95	3.30	3.12	3.21
Jan	2023	3.53	3.81	3.66	3.74
Feb	2023	3.75	3.95	3.80	3.88

Source of Information: Federal Reserve Bulletin

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Spread in Average Long-Term Bond Yields
Versus Public Utility Bond Yields
Yearly for 2017-2021, Monthly for the Years 2022 and 2023

Spread in Average Long-Term T-Bond Yields Versus Public Utility Bonds:

	Years	Aaa Rated	Aa Rated	A Rated	Baa Rated
	2017	NA	1.19	1.37	1.75
	2018	NA	1.08	1.24	1.66
	2019	NA	1.24	1.40	1.82
	2020	NA	1.52	1.75	2.12
	2021	NA	0.99	1.13	1.38
Average		NA	1.20	1.38	1.75
Jan	2022	NA	1.07	1.21	1.45
Feb	2022	NA	1.28	1.40	1.67
Mar	2022	NA	1.35	1.52	1.82
Apr	2022	NA	1.20	1.42	1.71
May	2022	NA	1.39	1.59	1.91
Jun	2022	NA	1.29	1.50	1.86
Jul	2022	NA	1.35	1.56	1.93
Aug	2022	NA	1.30	1.52	1.85
Sep	2022	NA	1.39	1.59	1.92
Oct	2022	NA	1.52	1.72	2.02
Nov	2022	NA	1.43	1.64	1.94
Dec	2022	NA	1.30	1.52	1.81
Avg	2022	NA	1.32	1.52	1.82
Jan	2023	NA	1.25	1.47	1.76
Feb	2023	NA	1.25	1.42	1.67

Comment: Derived from the information on pages 1 and 3 of this Schedule.

Interest Rate Trends for
Federal Funds Rate and Prime Rate
Yearly for 2017-2021, Monthly for the Years 2022 and 2023

	Years	Fed Funds Rate	Prime Rate
	2017	1.00	4.10
	2018	1.83	4.90
	2019	2.16	5.28
	2020	0.38	3.54
	2021	0.08	3.25
	Average	1.09	4.21
Jan	2022	0.08	3.25
Feb	2022	0.08	3.25
Mar	2022	0.20	3.37
Apr	2022	0.33	3.50
May	2022	0.77	3.94
Jun	2022	1.21	4.38
Jul	2022	1.68	4.85
Aug	2022	2.33	5.50
Sep	2022	2.56	5.73
Oct	2022	3.08	6.25
Nov	2022	3.78	6.95
Dec	2022	4.10	7.27
Avg	2022	1.68	4.85
Jan	2023	4.33	7.50
Feb	2023	4.57	7.74

Source of Information: Federal Reserve Bulletin

Blue Chip Financial Forecasts - March 1, 2023

	First Quarter 2023	Second Quarter 2023	Third Quarter 2023	Fourth Quarter 2023	First Quarter 2024	Five Quarter Average
Prime Rate						
Top Ten Average	7.9 %	8.3 %	8.5 %	8.4 %	8.3 %	8.3 %
Group Average	7.8	8.2	8.2	8.1	7.8	8.0
Bottom Ten Average	7.7	8.0	7.9	7.5	6.9	7.6
Three-Month Treasury Bills						
Top Ten Average	5.0	5.3	5.4	5.3	5.2	5.2
Group Average	4.8	5.1	5.1	4.9	4.6	4.9
Bottom Ten Average	4.7	4.9	4.7	4.3	3.8	4.5
Ten Year Treasury Notes						
Top Ten Average	3.9	4.2	4.4	4.4	4.3	4.2
Group Average	3.8	3.8	3.8	3.7	3.6	3.7
Bottom Ten Average	3.6	3.5	3.2	2.9	2.9	3.2
Thirty Year Treasury Bonds						
Top Ten Average	4.1	4.3	4.5	4.5	4.5	4.4
Group Average	3.9	4.0	3.9	3.9	3.8	3.9
Bottom Ten Average	3.7	3.7	3.4	3.3	3.2	3.5
Aaa-Rated Corporate Bonds						
Top Ten Average	5.2	5.5	5.5	5.5	5.6	5.4
Group Average	4.8	5.1	5.1	5.0	4.9	5.0
Bottom Ten Average	4.5	4.7	4.6	4.4	4.2	4.5
Baa-Rated Corporate Bonds						
Top Ten Average	5.1	5.1	5.1	5.1	5.1	5.1
Group Average	5.8	6.0	6.1	6.0	5.8	5.9
Bottom Ten Average	4.6	4.6	4.6	4.6	4.6	4.6

Derived Public Utility Bond Yield Forecasts Based on Aaa and Baa Corporate Yields

Aa-Rated Public Utility Bonds						
Top Ten Average	5.1	5.2	5.3	5.3	5.3	5.2
Group Average	5.3	5.5	5.6	5.5	5.3	5.4
Bottom Ten Average	4.5	4.6	4.6	4.5	4.4	4.5
A-Rated Public Utility Bonds						
Top Ten Average	5.3	5.4	5.5	5.5	5.5	5.4
Group Average	5.5	5.7	5.7	5.7	5.5	5.6
Bottom Ten Average	4.7	4.8	4.8	4.7	4.6	4.7
Baa-Rated Public Utility Bonds						
Top Ten Average	5.6	5.7	5.8	5.8	5.8	5.7
Group Average	5.8	6.0	6.0	6.0	5.8	5.9
Bottom Ten Average	5.0	5.1	5.1	5.0	4.9	5.0

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Settled Yields on Treasury Bond
Future Contracts
Traded on the Chicago Board of Trade
at the Close of January 00, 1900

Delivery Date	Treasury Bonds (CBOT)	
Mar-23	3.739	%
Jun-23	3.731	
Sep-23	3.731	
Average	3.734	%

Source of Information: Chicago Board of Trade

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Market Value Discounted Cash Flow for
The Water Group Followed by Analysts

	Water Group Followed by Analysts
Dividend Yield(1)	1.8 %
Growth in Dividends(2)	0.1
Adjusted Dividend Yield	1.9
Stock Appreciation(3)	7.0
Market Value DCF Cost Rate	8.9 %

Notes: (1) Developed on page 2 of this Schedule.
(2) Equal to one-half the assumed growth in value.
(3) As explained in the direct testimony, the growth in value is supported by the information shown on Schedules 13 and 14.

Market Value Dividend Yield for
the Water Group Followed by Analysts
For the Twelve Months Ended February 2023

	Recent Dividend Yields(1)	Longer Term Dividend Yields(2)	Average Yields
Water Group Followed by Analysts			
American States Water Co	1.7 %	1.8 %	
American Water Works Co Inc	1.8	1.7	
California Water Service Gp	1.7	1.7	
Essential Utilities, Inc.	2.5	2.4	
Middlesex Water Co	1.5	1.4	
SJW Corp	1.9	2.1	
York Water Co	1.8	1.8	
Average	1.8 %	1.8 %	1.8 %

Notes: (1) Average of the high and the low dividend yield for the month of February 2023.
(2) Average of the high and the low dividend yield for each of the twelve months ended February 2023.

Source of Information: S&P Capital IQ

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Development of Long Term Projected Growth in Value
Based Upon Growth Over The Next Five Years
For the Water Group Followed by Analysts

	A	B	C	D	E	F	G	H
	Analysts' Projected Growth in EPS				Other Projected Growth			
	First Call EPS Growth	S&P EPS Growth	ZACK's EPS Growth	Value Line EPS Growth	Value Line DPS Growth	Value Line Cash Flow Growth	Average EPS Growth	Average All Growth
Water Group Followed by Analysts								
American States Water Co	4.4 %	NA %	NA %	5.5 %	9.0 %	5.5 %	5.0 %	6.1 %
American Water Works Co Inc	8.3	7.7	8.1	3.0	8.5	3.5	6.8	6.5
California Water Service Gp	11.7	NA	NA	6.5	6.5	2.0	9.1	6.7
Essential Utilities, Inc.	6.6	6.1	6.0	10.0	8.0	10.0	7.2	7.8
Middlesex Water Co	2.7	NA	NA	6.0	6.0	4.5	4.4	4.8
SJW Corp	9.8	14.0	NA	12.0	5.5	1.5	11.9	8.6
York Water Co	4.9	NA	NA	NA	NA	NA	4.9	4.9
Average	6.9 %	9.3 %	7.1 %	7.2 %	7.3 %	4.5 %	7.0 %	6.5 %

	Historical 5-Year Growth in EPS			
	First Call EPS Growth	ZACK's EPS Growth	Value Line EPS Growth	Average EPS Growth
Water Group Followed by Analysts				
American States Water Co	8.5 %	6.2 %	8.5 %	7.7 %
American Water Works Co Inc	5.6	8.0	13.5	9.0
California Water Service Gp	-9.5	7.1	11.0	2.9
Essential Utilities, Inc.	1.6	5.3	1.0	2.6
Middlesex Water Co	6.6	8.7	11.0	8.8
SJW Corp	6.7	0.2	-6.5	0.1
York Water Co	6.7	7.1	6.0	6.6
Average	3.7 %	6.1 %	6.4 %	5.4 %

Source of Information: Value Line Investment Survey, 1/6/23; S&P Capital IQ 3/11/23;
FirstCall 3/11/23; and
Zacks Investment Research 3/11/23

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Recent Payout Ratios,
ROEs, P-E Multiples, Market/Book Multiples, and Market Value
For the Water Group Followed by Analysts

	Current Dividend Payout	Current Return on Equity	PE Mult	Market to Book Mult	Current Market Value (Mill $)
Water Group Followed by Analysts					
American States Water Co	69	11.5	41.3	4.68	3,300.608
American Water Works Co Inc	35	18.0	19.4	3.29	25,544.461
California Water Service Gp	66	6.7	38.5	2.46	3,138.126
Essential Utilities, Inc.	61	8.8	24.0	2.10	11,220.803
Middlesex Water Co	48	11.1	31.7	3.39	1,349.353
SJW Corp	73	5.7	39.5	2.21	2,357.912
York Water Co	57	10.5	32.0	3.03	620.734
Average	59	10.3	32.4	3.02	6,790.285

Source of Information: S&P Capital IQ, spot date of 2/28/2023

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Value Line Projected ROE Based on Year-End and Average,
Dividend Payout Ratio, and Common Equity Ratio for
The Water Group Followed by Analysts for 2025 - 2027

	Value Line Projected ROE	Projected Average ROE (1)	Value Line Projected Dividend Payout	Value Line Projected Common Equity Ratio
Water Group Followed by Analysts				
American States Water Co	13.5 %	13.8 %	66.2 %	48.0 %
American Water Works Co Inc	10.5	10.7	61.7	40.0
California Water Service Gp	9.5	9.6	49.0	62.5
Essential Utilities, Inc.	8.5	8.8	68.9	47.0
Middlesex Water Co	13.0	13.1	50.0	57.5
SJW Corp	8.0	8.1	54.2	55.0
York Water Co	NA	NA	NA	NA
Average	10.5 %	10.7 %	58.3 %	51.7 %

Notes: (1) Value Line ROE, which is a year-end ROE, is converted to average ROE by the factor derived from the following formula: 2((1+g)/(2+g)), where "g" is the rate of growth in common equity.

Source of Information: Value Line Investment Survey, 1/6/23

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Illustration of the
Effect of Market-To-Book Ratio on Market Return

Ln #		Situation 1	Situation 2	Situation 3
1	M/B Ratio	50%	100%	200%
2	Market Purchase Price	$25.00	$50.00	$100.00
3	Book Value	$50.00	$50.00	$50.00
4	DCF Return	10.0%	10.0%	10.0%
5	DCF Dollar Return	$5.00	$5.00	$5.00
6	Dividend Yield	5.0%	5.0%	5.0%
7	DPS	$1.25	$2.50	$5.00
8	Dollar Growth in Value	$3.75	$2.50	$0.00
9	Market Sale Price	$28.75	$52.50	$100.00
10	Total Market Return	20.0%	10.0%	5.0%

"The simple numerical illustration....demonstrates the impact of market-to-book ratios on the DCF market return....The DCF cost rate of 10%, made up of a 5% dividend yield and a 5% growth rate, is applied to the book value rate base of $50 to produce $5.00 of earnings. Of the $5.00 of earnings, the full $5.00 are required for dividends to produce a dividend yield of 5.0% on a stock price of $100.00, and no dollars are available for growth. The investor's return is therefore only 5% versus his required return of 10%. A DCF cost rate of 10%, which implies $10.00 of earnings, translates to only $5.00 of earnings on book value, or a 5% return.....Therefore, the DCF cost rate understates the investor's required return when stock prices are well above book, as is the case presently."

The above illustration is taken from Roger A Morin, Regulatory Finance - Utilities' Cost of Capital, Public Utility Reports, Inc., 1994, pp. 236-237.

Differences in Book Value and Market Values for the
Water Group Followed by Analysts

	Recent Book Value Capitalization Ratios (9/30/22)	Recent Market Value Capitalization Ratios (2/28/23)	Average Book Value of Common Equity (Millions)	Average Market Value of Common Equity (Millions)	Difference in Market Value and Book Value Common Equity
Water Group Followed by Analysts:					
Long Term Debt	49.8 %	26.2 %			
Preferred Stock	0.1	0.0			
Common Equity	50.1	73.8	$2,390.295	$6,790.285	$4,399.991
Total	100.0 %	100.0 %			
			Differnce in Common Equity Ratio		23.7%

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Water Group Followed by Analysts
Financial Risk Adjustment Using the "Hamada Models"

Original Hamada Formulas

Market Value @ (2/28/23)

Line No.	DEBT (D)	PREF (P)	CE (E)	TAX (t)	BETA (Bl)
2.	26.2%	0.0%	73.8%	27.87%	0.66

3. Bl = Bu (1+(1-t)D/E+P/E)

4.	1-t =	0.7213	
5.	D/E =	0.3550	
6.	P/E =	0.0000	
7.	Bl =	Bu *	1.2561
8.	Bu =	0.53	
9.			

Book Value @ (9/30/22)

Line No.	DEBT (D)	PREF (P)	CE (E)	TAX (t)	BETA UNLEVERED (Bu)
12.	49.80%	0.10%	50.10%	27.870%	0.53

13. Bl = Bu (1+(1-t)D/E+P/E)

14.	1-t =	0.7213	
15.	D/E =	0.9940	
16.	P/E =	0.0020	
17.	Bl =	Bu *	1.7190
18.	Bl =	0.90	

Cost Adjustment Based on Original *Hamada*

19.	Book Beta (Raw)	=	0.90
20.	Market Beta (Raw)	=	0.66
21.	Beta difference	=	0.24
22.	Risk premium	=	5.0
23.	Risk adjustment	=	1.20

Harris-Pringle Formulas

Market Value @ (2/28/23)

Line No.	DEBT (D)	PREF (P)	CE (E)	TAX (t)	BETA (Bl)	DEBT BETA (Bd)
2.	26.2%	0.0%	73.8%	27.87%	0.66	0.34

3. Bl = Bu + (Bu - Bd)(D/E)

4.	Bl =	0.66
5.	Bd =	0.34
6.	D/E =	0.3550
7.	Bl + Bd(D/E) =	0.7807
8.	1 + D/E =	1.3550
9.	Bu =	0.58

Book Value @ (9/30/22)

Line No.	DEBT (D)	PREF (P)	CE (E)	BETA UNLEVERED (Bu)
12.	49.80%	0.10%	50.10%	0.58

13. Bl = Bu + (Bu - Bd)(D/E)

14.	Bu =	0.58
15.	Bd =	0.34
16.	Bu - Bd =	0.2362
17.	D/E =	0.9940
18.	Bl =	0.81

Cost Adjustment Based on *Harris-Pringle*

19.	Book Beta (Raw)	=	0.81
20.	Market Beta (Raw)	=	0.66
21.	Beta difference	=	0.15
22.	Risk premium	=	5.0
23.	Risk adjustment	=	0.75

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Default Spread for
Aaa Rated Corporate Bonds and A Rated Investor-Owned Public Utility Bonds
Yearly for 2017-2021, Monthly for the Years 2022 and 2023

	Years	Corporate Aaa Rated	Public Utility A Rated	A Over Aaa
	2017	3.74	4.00	0.25
	2018	3.93	4.25	0.32
	2019	3.39	3.77	0.38
	2020	2.50	3.02	0.52
	2021	2.71	3.11	0.40
Average		3.25	3.63	0.37
Jan	2022	3.07	3.33	0.26
Feb	2022	3.25	3.68	0.43
Mar	2022	3.43	3.98	0.55
Apr	2022	3.76	4.32	0.56
May	2022	4.13	4.75	0.62
Jun	2022	4.24	4.86	0.62
Jul	2022	4.06	4.78	0.72
Aug	2022	4.07	4.76	0.69
Sep	2022	4.59	5.28	0.69
Oct	2022	5.10	5.88	0.78
Nov	2022	4.90	5.75	0.85
Dec	2022	4.43	5.28	0.85
Avg	2022	4.09	4.72	0.63
Jan	2023	4.40	5.20	0.80
Feb	2023	4.56	5.29	0.73

Source of Information: MERGENT BOND RECORD

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Market Value CAPM for
The Water Group Followed by Analysts

	Water Group Followed by Analysts
Estimation Based Upon Historical Information	
Market Premium(1)	7.5 %
x Beta(2)	0.79
Risk Adjusted Market Premium	5.9
Size Adjustment Premium(2)	1.8
Plus Risk Free Rate(1)	3.8
Market Value CAPM Cost Rate	11.5 %
Estimation Based Upon Projected Information	
Market Premium(1)	11.1 %
x Beta(2)	0.79
Risk Adjusted Market Premium	8.8
Size Adjustment Premium(2)	1.8
Plus Risk Free Rate(1)	3.8
Market Value CAPM Cost Rate	14.4 %

Market Value CAPM is: 11.5%

Notes: (1) Developed on page 2 of this Schedule.
(2) Developed on page 4 of this Schedule.

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Development of Market Premiums for Use in a CAPM Model

A	B	C	D	E	F	G	H
Value Line Summary & Index Month End Edition	Forecasted Market Dividend Yield	Stock Price Appreciation Next 3-5 Years	Annual Price Appreciation(1)	Annual Total Return(1)	Midpoint Market Return(2)	Average Market Return(3)	CAPM Projected Market Return
December-22	2.3 %	70 %	14.2 %	16.5 %			
January-23	2.1	55	11.6	13.7			
February-23	2.1	55	11.6	13.7			
					15.1 %	14.6 %	14.9 %
						Less Risk Free Rate(4)	3.8
						Estimated Market Premium Based Upon Projected Information (1)	11.1 %
						Estimated Market Premium Based Upon Historical Information (5)	7.5 %

See next page of this Schedule for Notes.

CAPM
The Water Group Followed by Analysts

Notes: (1) A projected market premium is based upon the projected market return rate derived from the Value Line Summary and Index for the various dates shown. For example, Value Line projects (Feb-23) that the market will appreciate in price 55% over the next three to five years. Using a four-year midpoint estimate, Value Line's appreciation potential equates to 11.6% annually ([1.55]^.25). Additionally, Value Line estimates the market will have a dividend yield of 2.1%. Combining the market dividend yield of 2.1% with the market appreciation results in a projected market return rate of 13.7% (11.6% + 2.1%).

(2) Mid point of the month-end total market returns in Column E.

(3) Average total market return in Column E.

(4) As discussed in the direct testimony, the risk-free rate is 3.8%.

(5) The historical market premium is based upon studies conducted by Ibbotson Associates concerning asset returns. Ibbotson Associates' asset return studies are the most noted asset return rate studies available today. The results are widely disseminated throughout the investment public. Ibbotson Associates' long-term common stock total market return is 12.33% which, when reduced by the long-term historic risk-free rate of 4.87% results in a market premium of 7.5% (12.33% - 4.87%).

Recent Market Values and
Beta Adjusted Ibbotson Associates Size Premiums For
The Water Group Followed by Analysts

	1	2	3	4	5	6	7	8
	Recent Market Value (Mill $)	Market Quartile Name	Market Quartile	Quartile Size Premium	Quartile Beta	Value Line Beta	Beta Ratio	Beta Adjusted Quartile Size Premium
Water Group Followed by Analysts								
American States Water Co	$3,300.608	Mid-Cap	2	2.48	1.13	0.65	58%	1.4
American Water Works Co Inc	25,544.461	Large-Cap	1	0.00	1.00	0.90	90%	0.0
California Water Service Gp	3,138.126	Mid-Cap	2	2.48	1.13	0.70	62%	1.5
Essential Utilities, Inc.	11,220.803	Mid-Cap	2	2.48	1.13	0.95	84%	2.1
Middlesex Water Co	1,349.353	Low-Cap	3	3.95	1.23	0.70	57%	2.3
SJW Corp	2,357.912	Low-Cap	3	3.95	1.23	0.80	65%	2.6
York Water Co	620.734	Low-Cap	3	3.95	1.23	0.80	65%	2.6
Average		Mid-Cap	2	2.48	1.13	0.79	69%	1.8

Source of Information: 2022 SBBI Yearbook, Stocks, Bonds, Bills, and Inflation, and Value Line

Case No. FLS-W-23-01
Exhibit No. 6
Schedule 17
H. Walker

Market Value Risk Premium
For the Water Group Followed by Analysts

	Water Group Followed by Analysts	
Prospective Public Utility Bond Yields(1)	5.4	%
Estimated Risk Premium(2)	5.0	
Market Value Risk Premium Indicated Cost Rate	10.4	%

Notes: (1) Based upon the current and prospective long-term debt cost rates, it is reasonable to expect that if the comparable group (i.e., Water Group) issued new long-term bonds, it would both be priced to yield about 5.4% based upon credit profiles of A for the Water Group.

(2) A 5% risk premium is concluded for the Group after reviewing the tabulation of risk spreads shown on pages 2, 3, 4 and 5 of this Schedule.

Annual Total Returns and Risk Premiums of
S&P Public Utility Stocks and Bonds
for the Years 2002-2021, 1992-2021, 1982-2021, 1972-2021,1962-2021, 1952-2021 and 1928-2021

	Annual Total Returns						
			Public Utility Bonds				
Periods	Public Utility Stock	L-Term T-Bonds	AAA	AAA & AA	AA	A	BBB
Average Annual Rates of Return							
2002 to 2021	0.1185	0.0725	0.0000	0.0865	0.0865	0.0886	0.0957
1992 to 2021	0.1183	0.0822	0.0916	0.0885	0.0890	0.0876	0.0935
1982 to 2021	0.1396	0.1038	0.1329	0.1096	0.1106	0.1113	0.1178
1972 to 2021	0.1311	0.0861	0.1000	0.0947	0.0956	0.0963	0.1030
1962 to 2021	0.1149	0.0759	0.0799	0.0822	0.0830	0.0838	0.0895
1952 to 2021	0.1236	0.0666	0.0668	0.0726	0.0733	0.0744	0.0799
1928 to 2021	0.1116	0.0577	0.0594	0.0658	0.0668	0.0690	0.0759
Average Risk Premiums							
2002 to 2021		0.0460	0.1185	0.0320	0.0320	0.0299	0.0229
1992 to 2021		0.0361	0.0268	0.0298	0.0293	0.0307	0.0248
1982 to 2021		0.0358	0.0067	0.0300	0.0291	0.0283	0.0218
1972 to 2021		0.0390	0.0349	0.0327	0.0319	0.0311	0.0254
1962 to 2021		0.0390	0.0349	0.0327	0.0319	0.0311	0.0254
1952 to 2021		0.0570	0.0567	0.0510	0.0503	0.0491	0.0437
1928 to 2021		0.0539	0.0522	0.0458	0.0448	0.0426	0.0357

Annual Total Returns, Annual Income Returns and Risk Premiums of
S&P Public Utility Stocks and Bonds
for the Years 2002-2021, 1992-2021, 1982-2021, 1972-2021,1962-2021, 1952-2021 and 1928-2021

Periods	Annual Total Returns Public Utility Stock	Annual Income Returns					
			Public Utility Bonds				
		L-Term T-Bonds	AAA	AAA & AA	AA	A	BBB
Average Rates of Return							
2002 to 2021	0.1185	0.0357	0.0000	0.0482	0.0482	0.0501	0.0551
1992 to 2021	0.1183	0.0456	0.0755	0.0578	0.0580	0.0597	0.0639
1982 to 2021	0.1396	0.0588	0.0918	0.0706	0.0709	0.0731	0.0773
1972 to 2021	0.1311	0.0645	0.0924	0.0756	0.0761	0.0784	0.0828
1962 to 2021	0.1149	0.0622	0.0836	0.0726	0.0732	0.0753	0.0795
1952 to 2021	0.1236	0.0581	0.0743	0.0675	0.0681	0.0702	0.0740
1928 to 2021	0.1116	0.0500	0.0609	0.0590	0.0597	0.0623	0.0670
Average Risk Premiums							
2002 to 2021		0.0828	0.1185	0.0703	0.0703	0.0684	0.0634
1992 to 2021		0.0727	0.0428	0.0605	0.0603	0.0587	0.0544
1982 to 2021		0.0808	0.0479	0.0690	0.0687	0.0665	0.0623
1972 to 2021		0.0527	0.0312	0.0423	0.0417	0.0396	0.0354
1962 to 2021		0.0527	0.0312	0.0423	0.0417	0.0396	0.0354
1952 to 2021		0.0655	0.0493	0.0560	0.0555	0.0534	0.0495
1928 to 2021		0.0615	0.0507	0.0526	0.0519	0.0493	0.0446

Annual Total Returns, Annual Income Returns and Risk Premiums of
S&P Public Utility Stocks and Bonds
For the 47 Years of the Lowest Interest Rate Environment and the 47 Years of the Highest Interest Rate Environment
For The Years 1928-2021

Current Interest Rate Environment: 3.8%

Periods	Public Utility Stock	L-Term T-Bonds	Public Utility Bonds AAA	AAA & AA	AA	A	BBB
Annual Total Returns							
Low Interest Rate Environment:							
47 Years of the Lowest Interest Rates, Ranging from 1.4% to 4.1% with an Average Rate of 2.9%							
Average Rates of Return	0.1121	0.0332	0.0366	0.0500	0.0512	0.0562	0.0679
Average Risk Premiums		0.0788	0.0754	0.0621	0.0609	0.0559	0.0442
High Interest Rate Environment:							
47 Years of the Highest Interest Rates, Ranging from 4.1% to 13.5% with an Average Rate of 7.2%							
Average Risk Premiums	0.1111	0.0822	0.0788	0.0815	0.0823	0.0818	0.0839
Average Risk Premiums		0.0289	0.0323	0.0296	0.0287	0.0293	0.0271
Annual Income Returns							
Low Interest Rate Environment:							
47 Years of the Lowest Interest Rates, Ranging from 1.4% to 4.1% with an Average Rate of 2.9%							
Average Rates of Return	0.1121	0.0285	0.0340	0.0366	0.0372	0.0401	0.0459
Average Risk Premiums		0.0835	0.0780	0.0755	0.0748	0.0719	0.0661
High Interest Rate Environment:							
47 Years of the Highest Interest Rates, Ranging from 4.1% to 13.5% with an Average Rate of 7.2%							
Average Risk Premiums	0.1111	0.0716	0.0837	0.0814	0.0822	0.0844	0.0881
Average Risk Premiums		0.0395	0.0274	0.0296	0.0289	0.0267	0.0230

Annual Total Returns of
S&P Public Utility Stocks and Bonds
for the Years 1928-2021

	Annual Total Returns						
			Public Utility Bonds				
Years	Public Utility Stocks	L-Term T-Bonds	AAA	AAA & AA	AA	A	BBB
1928	0.5431	-0.0030	0.0370	0.0388	0.0406	0.0372	0.0392
1929	0.1376	0.0410	0.0209	0.0193	0.0178	0.0163	-0.0076
1930	-0.2149	0.0509	0.0917	0.0892	0.0869	0.0820	0.0378
1931	-0.3193	-0.0782	0.0058	-0.0059	-0.0171	-0.0608	-0.1089
1932	-0.0724	0.1736	0.1073	0.1037	0.1003	0.0685	0.0570
1933	-0.2170	0.0090	0.0142	-0.0145	-0.0401	-0.0686	-0.0601
1934	-0.1743	0.0962	0.1712	0.2000	0.2272	0.3264	0.4593
1935	0.6914	0.0610	0.1053	0.1243	0.1427	0.1760	0.2885
1936	0.2357	0.0691	0.0783	0.0916	0.1046	0.1079	0.1078
1937	-0.3337	-0.0091	0.0290	0.0323	0.0357	0.0272	-0.0626
1938	0.1020	0.0662	0.0720	0.0773	0.0825	0.0884	0.1505
1939	0.1538	0.0692	0.0435	0.0473	0.0510	0.0851	0.0923
1940	-0.1643	0.0910	0.0480	0.0506	0.0532	0.0949	0.1359
1941	-0.3050	0.0234	0.0255	0.0291	0.0327	0.0428	0.0681
1942	0.1079	-0.0735	0.0261	0.0287	0.0313	0.0314	0.0590
1943	0.4750	0.0228	0.0312	0.0346	0.0380	0.0405	0.0564
1944	0.1879	0.0268	0.0343	0.0353	0.0362	0.0303	0.0459
1945	0.5665	0.1075	0.0298	0.0349	0.0383	0.0683	0.0805
1946	-0.0130	-0.0006	0.0233	0.0238	0.0242	0.0267	0.0377
1947	-0.1236	-0.0165	-0.0139	-0.0187	-0.0234	-0.0213	-0.0105
1948	0.0451	0.0202	0.0287	0.0317	0.0347	0.0225	0.0073
1949	0.3074	0.0760	0.0718	0.0746	0.0773	0.0892	0.0757
1950	0.0152	-0.0034	0.0126	0.0131	0.0135	0.0107	0.0233
1951	0.2075	-0.0541	-0.0393	-0.0393	-0.0393	-0.0468	-0.0268
1952	0.1947	0.0101	0.0373	0.0390	0.0407	0.0442	0.0399
1953	0.0918	0.0062	0.0078	0.0063	0.0048	0.0107	0.0037
1954	0.2269	0.0676	0.0668	0.0701	0.0733	0.0745	0.0909
1955	0.1357	-0.0264	-0.0107	-0.0127	-0.0147	-0.0100	0.0146
1956	0.0416	-0.0484	-0.0703	-0.0703	-0.0703	-0.0714	-0.0816
1957	0.0541	0.0472	0.0246	0.0229	0.0213	0.0054	-0.0131
1958	0.3827	-0.0439	-0.0081	-0.0032	0.0017	0.0123	0.0339
1959	0.0958	-0.0320	-0.0231	-0.0234	-0.0237	-0.0120	-0.0102
1960	0.1680	0.1106	0.0764	0.0735	0.0705	0.0791	0.0994
1961	0.3646	0.0135	0.0432	0.0448	0.0464	0.0502	0.0442
1962	-0.0519	0.0650	0.0831	0.0829	0.0828	0.0852	0.0891
1963	0.1261	-0.0022	0.0171	0.0202	0.0232	0.0294	0.0329
1964	0.1685	0.0439	0.0394	0.0391	0.0387	0.0409	0.0396
1965	0.0489	-0.0064	-0.0010	-0.0014	-0.0018	-0.0044	0.0050
1966	-0.0504	0.0085	-0.0501	-0.0509	-0.0518	-0.0602	-0.0990
1967	-0.0216	-0.0650	-0.0525	-0.0539	-0.0553	-0.0592	-0.0271
1968	0.1419	0.0149	0.0268	0.0224	0.0181	0.0286	0.0243
1969	-0.1769	-0.0640	-0.0792	-0.0839	-0.0885	-0.0960	-0.0892
1970	0.1494	0.1537	0.0970	0.0978	0.0987	0.0952	0.0761
1971	0.0050	0.0999	0.1168	0.1241	0.1313	0.1510	0.1681
1972	0.1464	0.0661	0.0912	0.0980	0.1047	0.1103	0.1387
1973	-0.2106	-0.0893	0.0158	0.0138	0.0118	0.0156	0.0150
1974	-0.2135	0.0092	-0.0315	-0.0360	-0.0405	-0.0683	-0.1033

Annual Total Returns of
S&P Public Utility Stocks and Bonds
for the Years 1928-2021

	Annual Total Returns						
			Public Utility Bonds				
Years	Public Utility Stocks	L-Term T-Bonds	AAA	AAA & AA	AA	A	BBB
1975	0.4364	0.0465	0.0915	0.0863	0.0813	0.0872	0.0940
1976	0.3245	0.1955	0.1976	0.2017	0.2058	0.2475	0.2806
1977	0.1076	0.0074	0.0459	0.0545	0.0629	0.0683	0.0903
1978	-0.0174	-0.0189	-0.0083	-0.0055	-0.0027	-0.0026	0.0000
1979	0.1221	-0.0289	-0.0424	-0.0509	-0.0590	-0.0655	-0.0823
1980	0.1275	-0.0804	-0.0782	-0.0778	-0.0773	-0.0702	-0.0649
1981	0.1464	0.0472	0.0616	0.0674	0.0730	0.0416	0.0674
1982	0.2292	0.4323	0.3294	0.3750	0.3942	0.3708	0.3808
1983	0.2372	-0.0049	0.0721	0.0691	0.0763	0.1406	0.1347
1984	0.2219	0.1611	0.1770	0.1796	0.1768	0.1783	0.2075
1985	0.3232	0.3143	0.3473	0.3276	0.3259	0.3143	0.3098
1986	0.3575	0.3692	0.2994	0.2720	0.2698	0.2835	0.2933
1987	-0.0544	-0.1013	-0.1132	-0.0637	-0.0566	-0.0435	-0.0505
1988	0.1849	0.1026	0.2027	0.1615	0.1594	0.1643	0.1919
1989	0.4351	0.2176	0.1770	0.1743	0.1715	0.1692	0.1781
1990	0.0069	0.0482	0.0685	0.0689	0.0722	0.0738	0.0728
1991	0.0931	0.1472	0.1813	0.1647	0.1624	0.1715	0.1878
1992	0.1183	0.1093	0.1264	0.1312	0.1324	0.1355	0.1315
1993	0.1661	0.2162	0.1926	0.2126	0.2190	0.1429	0.1590
1994	-0.0825	-0.1075	-0.0802	-0.0656	-0.0657	0.0065	-0.0351
1995	0.3772	0.3268	0.2860	0.3074	0.3089	0.2164	0.2442
1996	0.0550	0.0020	0.0279	0.0211	0.0214	0.0279	0.0415
1997	0.1959	0.1454	0.1181	0.1157	0.1169	0.1238	0.1496
1998	0.1896	0.1786	0.1431	0.0365	0.0289	0.1074	0.0981
1999	-0.0998	-0.1062	-0.0792	-0.0275	-0.0237	-0.0921	-0.0684
2000	0.5475	0.1922	0.1076	0.1150	0.1146	0.1101	0.1196
2001	-0.2877	0.0596	0.0734	0.0788	0.0873	0.0780	0.0534
2002	-0.2934	0.1362		0.1851	0.1851	0.2461	0.1746
2003	0.2509	0.0488		0.1678	0.1678	0.1529	0.2329
2004	0.2763	0.0861		0.1162	0.1162	0.0782	0.0919
2005	0.2151	0.0520		0.0869	0.0869	0.0732	0.0541
2006	0.2323	0.0421		0.0486	0.0486	0.0596	0.0759
2007	0.1434	0.0814		0.0043	0.0043	0.0143	0.0042
2008	-0.3160	0.2953		0.0733	0.0733	0.0132	-0.1109
2009	0.1801	-0.1460		0.1159	0.1159	0.1662	0.3279
2010	0.0795	0.0755		0.0809	0.0809	0.0871	0.0893
2011	0.2051	0.3271		0.2701	0.2701	0.2505	0.2019
2012	0.1272	0.0622		0.0801	0.0801	0.0955	0.1287
2013	0.1363	-0.1592		-0.0850	-0.0850	-0.0758	-0.0494
2014	0.3017	0.2419		0.1577	0.1577	0.1872	0.1333
2015	-0.0629	0.0115		-0.0031	-0.0031	-0.0227	-0.0682
2016	0.1834	-0.0224		0.0443	0.0443	0.0512	0.1625
2017	0.1966	0.0714		0.1224	0.1224	0.1211	0.1505
2018	0.0644	-0.0579		-0.0566	-0.0566	-0.0477	-0.0680
2019	0.2690	0.2127		0.2209	0.2209	0.2098	0.2471
2020	0.0301	0.1584		0.1505	0.1505	0.1465	0.1557
2021	0.1510	-0.0679		-0.0499	-0.0499	-0.0335	-0.0210

Annual Total Returns of S&P Public Utility Stocks
And Annual Income Returns of Bonds
for the Years 1928-2021

	Annual Total Returns	Income Returns					
			Public Utility Bonds				
Years	Public Utility Stocks	L-Term T-Bonds	AAA	AAA & AA	AA	A	BBB
1928	0.5431	0.0329	0.0451	0.0460	0.0470	0.0499	0.0541
1929	0.1376	0.0361	0.0468	0.0479	0.0490	0.0522	0.0578
1930	-0.2149	0.0332	0.0458	0.0470	0.0482	0.0514	0.0591
1931	-0.3193	0.0338	0.0434	0.0449	0.0463	0.0511	0.0635
1932	-0.0724	0.0350	0.0474	0.0504	0.0535	0.0640	0.0815
1933	-0.2170	0.0315	0.0436	0.0468	0.0499	0.0604	0.0833
1934	-0.1743	0.0306	0.0402	0.0436	0.0471	0.0559	0.0713
1935	0.6914	0.0278	0.0351	0.0376	0.0402	0.0466	0.0544
1936	0.2357	0.0273	0.0324	0.0343	0.0362	0.0415	0.0465
1937	-0.3337	0.0275	0.0320	0.0334	0.0347	0.0395	0.0486
1938	0.1020	0.0263	0.0303	0.0316	0.0329	0.0392	0.0510
1939	0.1538	0.0239	0.0286	0.0296	0.0305	0.0360	0.0448
1940	-0.1643	0.0224	0.0277	0.0285	0.0293	0.0331	0.0410
1941	-0.3050	0.0197	0.0269	0.0276	0.0283	0.0304	0.0366
1942	0.1079	0.0239	0.0272	0.0279	0.0287	0.0305	0.0358
1943	0.4750	0.0246	0.0264	0.0269	0.0273	0.0296	0.0338
1944	0.1879	0.0248	0.0265	0.0268	0.0272	0.0294	0.0333
1945	0.5665	0.0229	0.0256	0.0261	0.0266	0.0285	0.0318
1946	-0.0130	0.0208	0.0250	0.0254	0.0257	0.0268	0.0293
1947	-0.1236	0.0215	0.0257	0.0261	0.0264	0.0273	0.0297
1948	0.0451	0.0240	0.0282	0.0287	0.0292	0.0301	0.0327
1949	0.3074	0.0223	0.0270	0.0274	0.0277	0.0291	0.0324
1950	0.0152	0.0216	0.0262	0.0264	0.0267	0.0276	0.0312
1951	0.2075	0.0244	0.0285	0.0288	0.0291	0.0307	0.0334
1952	0.1947	0.0265	0.0300	0.0303	0.0305	0.0324	0.0351
1953	0.0918	0.0300	0.0325	0.0328	0.0331	0.0347	0.0371
1954	0.2269	0.0266	0.0296	0.0298	0.0301	0.0317	0.0348
1955	0.1357	0.0287	0.0307	0.0309	0.0311	0.0324	0.0341
1956	0.0416	0.0310	0.0335	0.0337	0.0340	0.0357	0.0374
1957	0.0541	0.0355	0.0397	0.0400	0.0403	0.0428	0.0452
1958	0.3827	0.0344	0.0384	0.0386	0.0389	0.0414	0.0447
1959	0.0958	0.0409	0.0445	0.0448	0.0451	0.0470	0.0494
1960	0.1680	0.0409	0.0450	0.0453	0.0455	0.0473	0.0489
1961	0.3646	0.0391	0.0442	0.0445	0.0449	0.0462	0.0476
1962	-0.0519	0.0401	0.0434	0.0437	0.0439	0.0450	0.0466
1963	0.1261	0.0403	0.0427	0.0429	0.0431	0.0437	0.0456
1964	0.1685	0.0419	0.0441	0.0442	0.0443	0.0450	0.0466
1965	0.0489	0.0424	0.0448	0.0450	0.0451	0.0458	0.0475
1966	-0.0504	0.0475	0.0513	0.0515	0.0518	0.0531	0.0552
1967	-0.0216	0.0494	0.0553	0.0556	0.0559	0.0576	0.0605
1968	0.1419	0.0543	0.0621	0.0627	0.0633	0.0651	0.0684
1969	-0.1769	0.0624	0.0706	0.0716	0.0725	0.0743	0.0778
1970	0.1494	0.0692	0.0822	0.0833	0.0844	0.0870	0.0913
1971	0.0050	0.0614	0.0766	0.0777	0.0789	0.0825	0.0868
1972	0.1464	0.0601	0.0744	0.0751	0.0758	0.0778	0.0815
1973	-0.2106	0.0701	0.0762	0.0767	0.0773	0.0789	0.0812
1974	-0.2135	0.0800	0.0849	0.0861	0.0873	0.0899	0.0929

Annual Total Returns of S&P Public Utility Stocks
And Annual Income Returns of Bonds
for the Years 1928-2021

	Annual Total Returns	Income Returns					
			Public Utility Bonds				
Years	Public Utility Stocks	L-Term T-Bonds	AAA	AAA & AA	AA	A	BBB
1975	0.4364	0.0817	0.0894	0.0912	0.0929	0.0978	0.1057
1976	0.3245	0.0794	0.0864	0.0880	0.0895	0.0928	0.0987
1977	0.1076	0.0765	0.0814	0.0829	0.0845	0.0859	0.0896
1978	-0.0174	0.0840	0.0877	0.0888	0.0900	0.0917	0.0947
1979	0.1221	0.0921	0.0962	0.0978	0.0995	0.1017	0.1064
1980	0.1275	0.1115	0.1182	0.1211	0.1241	0.1271	0.1352
1981	0.1464	0.1349	0.1427	0.1458	0.1489	0.1529	0.1616
1982	0.2292	0.1309	0.1439	0.1448	0.1464	0.1532	0.1610
1983	0.2372	0.1115	0.1247	0.1229	0.1237	0.1298	0.1350
1984	0.2219	0.1247	0.1297	0.1339	0.1341	0.1374	0.1434
1985	0.3232	0.1104	0.1187	0.1179	0.1189	0.1228	0.1270
1986	0.3575	0.0802	0.0908	0.0930	0.0940	0.0973	0.1015
1987	-0.0544	0.0843	0.0934	0.0946	0.0953	0.0985	0.1027
1988	0.1849	0.0897	0.1013	0.1009	0.1014	0.1040	0.1083
1989	0.4351	0.0854	0.0938	0.0949	0.0955	0.0980	0.1001
1990	0.0069	0.0858	0.0943	0.0959	0.0964	0.0985	0.1009
1991	0.0931	0.0818	0.0891	0.0915	0.0921	0.0943	0.0961
1992	0.1183	0.0769	0.0822	0.0860	0.0869	0.0887	0.0897
1993	0.1661	0.0671	0.0737	0.0776	0.0780	0.0805	0.0816
1994	-0.0825	0.0730	0.0794	0.0799	0.0802	0.0826	0.0868
1995	0.3772	0.0708	0.0781	0.0774	0.0776	0.0813	0.0857
1996	0.0550	0.0672	0.0745	0.0742	0.0745	0.0762	0.0805
1997	0.1959	0.0670	0.0746	0.0743	0.0746	0.0747	0.0782
1998	0.1896	0.0572	0.0682	0.0674	0.0677	0.0687	0.0710
1999	-0.0998	0.0592	0.0710	0.0740	0.0748	0.0743	0.0766
2000	0.5475	0.0607	0.0790	0.0817	0.0821	0.0830	0.0839
2001	-0.2877	0.0557	0.0747	0.0777	0.0780	0.0787	0.0810
2002	-0.2934	0.0542		0.0730	0.0730	0.0754	0.0818
2003	0.2509	0.0496		0.0646	0.0646	0.0623	0.0673
2004	0.2763	0.0505		0.0608	0.0608	0.0617	0.0641
2005	0.2151	0.0465		0.0546	0.0546	0.0566	0.0592
2006	0.2323	0.0499		0.0583	0.0583	0.0607	0.0632
2007	0.1434	0.0493		0.0591	0.0591	0.0605	0.0629
2008	-0.3160	0.0448		0.0619	0.0619	0.0650	0.0711
2009	0.1801	0.0401		0.0579	0.0579	0.0610	0.0721
2010	0.0795	0.0405		0.0525	0.0525	0.0548	0.0598
2011	0.2051	0.0375		0.0489	0.0489	0.0514	0.0565
2012	0.1272	0.0256		0.0385	0.0385	0.0416	0.0490
2013	0.1363	0.0302		0.0417	0.0417	0.0441	0.0492
2014	0.3017	0.0316		0.0424	0.0424	0.0435	0.0485
2015	-0.0629	0.0254		0.0397	0.0397	0.0408	0.0496
2016	0.1834	0.0221		0.0373	0.0373	0.0394	0.0474
2017	0.1966	0.0267		0.0386	0.0386	0.0404	0.0443
2018	0.0644	0.0307		0.0404	0.0404	0.0420	0.0460
2019	0.2690	0.0248		0.0369	0.0369	0.0385	0.0429
2020	0.0301	0.0141		0.0285	0.0285	0.0307	0.0345
2021	0.1510	0.0194		0.0293	0.0293	0.0308	0.0334

Development of the Projected Risk Premium

A	B	C	D	E	F	G	H	I
Value Line Summary & Index Month End Edition	Forecasted Market Dividend Yield	Stock Price Appreciation Next 3-5 Years	Annual Price Appreciation	Forecasted Annual Total Return	Less: Yield of Moody's A Rated Industrial Bonds	Forecasted Equity Premium	Estimated Risk Adjustment	Forecasted Risk Premium
December-22	2.3 %	70 %	14.2 %	16.5 %	4.94 %	11.6 %	90 %	10.4 %
January-23	2.1	55	11.6	13.7	4.88	8.8	90	7.9
February-23	2.1	55	11.6	13.7	5.03	8.7	90	7.8
		Midpoint of data		15.1		10.1		9.1 %
		Quarter's Average		14.6		9.7		8.7 %

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Falls Water, Inc.
Common Equity Cost Rate Summary

	Water Group Followed by Analysts		
	DCF(1)	CAPM(2)	RP(3)
Common Equity Cost Rate Range	9.70 %	12.30 %	11.20 %
Investment Risk Adjustments (4)	0.00	0.00	0.00
Falls Water, Inc. Adjusted Common Equity Cost Rate Range:	9.70	12.30	11.20
Falls Water, Inc. Recommended Common Equity Cost Rate (5)		11.00 %	
Check of Reasonableness of Common Equity Cost Rate (6)		10.5 % to 10.7 %	

Notes: (1) From Schedule 12 and explained in the Direct Testimony.
(2) From Schedule 17 and explained in the Direct Testimony.
(3) From Schedule 18 and explained in the Direct Testimony.
(4) As explained in the Direct Testimony.
(5) As explained in the Direct Testimony, the recommendation is only applicable to a rate making common equity ratio of 55%. (~55.00%)
(6) See page 2 of Schedule 14.

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