

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

IN THE MATTER OF A PROCEEDING ON MOTION  
OF THE COMMISSION AS TO THE RATES, CHARGES,  
RULES AND REGULATIONS OF

**SUEZ WATER OWEGO-NICHOLS, INC.**  
FOR WATER SERVICE

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P.S.C. Case 17-W-0528

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REBUTTAL TESTIMONY

OF

HAROLD WALKER, III

JANUARY 12, 2018

REBUTTAL TESTIMONY OF HAROLD WALKER III  
SUEZ WATER OWEGO-NICHOLS  
17-W-0528

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OF  
HAROLD WALKER, III  
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**INTRODUCTION AND PURPOSE**

**Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.**

A. My name is Harold Walker, III. I am employed by Gannett Fleming Valuation and Rate Consultants, LLC as Manager, Financial Studies. My business mailing address is P. O. Box 80794, Valley Forge, Pennsylvania 19484.

**Q. ARE YOU THE SAME HAROLD WALKER WHO PREVIOUSLY SUBMITTED TESTIMONY IN THIS PROCEEDING?**

A. Yes.

**Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY AT THIS TIME?**

A. The purpose of my Rebuttal Testimony is to respond to the Prepared Testimony of Andrew Hale of the Department of Public Service Staff (“Staff”) concerning capital structure, common equity cost rate and overall rate of return for Suez Water Owego-Nichols, Inc. (“SWON” or the “Company”). My rebuttal testimony is supported by Exhibit (HW-1R), which is composed of 12 Schedules.

**SUMMARY**

**Q. WHAT AREAS OF MR. HALE'S TESTIMONY DO YOU ADDRESS IN YOUR REBUTTAL TESTIMONY?**

A. My testimony addresses Mr. Hales' recommended:

- Group of Proxy companies;
- Use of a hypothetical capital structure ratios for SWON;
- Method of determining a hypothetical capital structure ratios for SWON;
- Debt cost for SWON;

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- Application of the Discounted Cash Flow Model (“DCF”) and Capital Asset Pricing Model (“CAPM”);
- Common equity cost rate relative to current and recently authorized return rates on common equity various regulatory commissions; and
- Common equity cost rate applicable to SWON.

My testimony also addresses Mr. Hales’ comments on my prepared direct testimony. I respectfully disagree with Mr. Hale's proposed return on equity of 8.50% and his proposed overall rate of return of 6.63% and I do not believe the New York State Public Service Commission (“Commission” or “PSC”) should accept Mr. Hale's proposals.

**A FAIR RATE OF RETURN**

**Q. DOES THE RECOMMENDATION OF STAFF PROVIDE THE COMPANY WITH THE OPPORTUNITY TO EARN A FAIR RATE OF RETURN?**

A. No. In *Bluefield*<sup>1</sup>, 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) will maintain and support its credit, enabling the utility to raise or attract additional capital necessary to provide reliable service (the capital attraction standard).

Mr. Hale’s rate of return recommendation is flawed and does not produce a fair rate of return for SWON. Throughout this rebuttal testimony I highlight the numerous defects contained in his testimony. Mr. Hale’s recommendations show a lack of understanding of the precepts of a fair rate of return, including the comparable earnings standard; capital

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<sup>1</sup>*Bluefield Water Works & Improvement Company v. P.S.C. of West Virginia*, 262 U.S. 679 (1923).

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attraction standard, and the financial integrity standard. Mr. Hale's testimony implies that SUEZ Water Resources Inc. ("SWR") ownership of SWON reduces the risk of SWON providing water service to customers. I do not believe it is reasonable that SWON should be afforded something less than a fair rate of return because they are owned by a larger company such as SWR.

Mr. Hale's testimony violates the precepts of a fair rate of return, including the comparable earnings standard, the capital attraction standard, and the financial integrity standard. Mr. Hale's recommendation violates all three aforementioned fair rate of return precepts as demonstrated by his own testimony. SWON is entitled to a return that will enable it to attract additional capital, not only capital provided by SWR. The credit that enables SWR bonds to be issued is the issuing entity, SWR. A fair rate of return for SWON is the credit that should enable the SWON to attract capital regardless of SWR. The risk of SWON providing service to customers is not mitigated simply because the SWR provides capital or because SWR owns other water utilities. Risk does not change with ownership, and the price or cost of bearing risk is what it is. Mr. Hale's recommendation offers no incentive to investors to invest in SWON water assets when higher returns are available from other less risky water assets. Investors will not provide capital and should not be forced to provide capital when higher risk-adjusted returns are available.

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**STAFF'S PROXY GROUP**

**Q. WHAT PROXY GROUP DID MR. HALE UTILIZE IN HIS TESTIMONY?**

A. Mr. Hale relied upon a proxy group comprised of 37 companies ("Staff's Group").<sup>2</sup> Staff's Group includes 29 energy utilities ("Staff's Energy Group") and 8 water utilities ("Staff's Water Group"). Staff's Water Group includes the same companies that I selected for my Comparable Group in my direct testimony (Page 10, direct testimony). Accordingly, any reference or analyses I made of my Comparable Group in my direct testimony is applicable to Staff's Water Group. Additionally, in my rebuttal testimony the terms "Comparable Group" and "Staff's Water Group" should be considered interchangeable as they reference the same eight water utilities.

**Q. DID MR. HALE UTILIZE HIS PROXY GROUP TO DETERMINE HIS HYPOTHETICAL CAPITAL STRUCTURE AND HIS RECOMMENDED RETURN ON COMMON EQUITY?**

A. Yes. Mr. Hale utilize the Staff's Group to determine his hypothetical capital structure and his recommended return on common equity.

**Q. DID MR. HALE PROVIDE ANY ANALYSES QUANTIFYING OR QUALIFYING THE RISK OF THE STAFF'S GROUP AS COMPARED TO SWON?**

A. No. Mr. Hale provided a "S&P Risk Profile" for Staff's Group but he did not provide any other risk assessment of Staff's Group and he did not provide any risk assessment of SWON.

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2 Mr. Hale lists the names of the companies that comprise the Staff's Group on Exhibit\_\_\_\_(ASH-18).

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**Q. DID MR. HALE PROVIDE ANY ANALYSES QUANTIFYING OR QUALIFYING THE RISK OF SWR AS COMPARED TO SWON?**

A. No. Mr. Hale provided a “S&P Risk Profile” or credit report for SWR but he did not provide any other risk assessment of SWR and he did not provide any risk assessment of SWON. According to the information presented by Mr. Hale, Standard & Poor’s believes SWR risk is mitigated by “Geographic and regulatory diversity” and a “Large customer base.”<sup>3</sup> Further, regarding SWR Standard & Poor’s states:

Our assessment of SWR's business risk profile is based on its mostly lower-risk and rate-regulated water distribution business that serves about 2 million customers across New Jersey, New York, Delaware, Pennsylvania, and Idaho. We view SWR's management of regulatory risk as above average, partially reflecting the extensive use of constructive regulatory mechanisms, including the DSIC rider in New Jersey, Pennsylvania, and Delaware, as well as a revenue decoupling mechanism in New York. Under our base-case scenario, we expect that the company will continue to effectively manage regulatory risk, in part due to the frequency of rate case filings, and will continue to use riders that we collectively view as favorable for the company's credit quality.<sup>4</sup>

As noted in my direct testimony (Page 6, direct testimony) SWON is a regulated public utility that provides water service to approximately 1,557 (12/31/16) customers who are located in their franchise territories in the State of New York, in a portion of Tioga County, including the Village of Owego, parts of the Town of Tioga Center, the Town of Owego and the Village of Nichols.<sup>5</sup> SWR has a more diverse geographic operation than SWON, which enables SWR to sustain earnings fluctuations caused by abnormal levels of

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3 Exhibit\_\_\_(ASH-13), page 2 of 7.

4 Exhibit\_\_\_(ASH-13), page 3 of 7.

5 Post-2016 the Company recently began providing water service through the purchase of the assets of the “The Forest Park Group,” a collection of 14 separate privately owned water companies that provide water service, to approximately 980 customers located in the Towns of Carmel and Southeast in Putnam County and the Town of

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rainfall in one portion of its service territory and since SWR operates in more than one regulatory jurisdiction it enjoys "regulatory diversification" which makes it less susceptible to adverse regulatory developments or eminent domain claims in any single jurisdiction. Further, SWR with a more diverse customer base is less susceptible to downturns associated with regional economic conditions than SWON.

For example, SWR provides water/sewer service in multiple states through 16 water and waste water utilities for about 2 million customers. These wide-ranging operations provide the SWR substantial geographic, economic, regulatory, weather and customer diversification. The SWON currently provides regulated water service to about 2,537 customers (1,557 + 980). The concentration of the SWON's business in southern New York makes it very susceptible to any adverse development in local regulatory, economic, demographic, competitive and weather conditions.

Taken together, this comparison shows that SWON is exposed to risk that is similar in nature but greater in degree compared with the SWR. This is evident when one considers the size and diversification of SWON, or lack thereof, as compared to the SWR.

**Q. DO YOU BELIEVE IT IS SIGNIFICANT THAT MR. HALE DID NOT PROVIDE ANY ANALYSES QUANTIFYING OR QUALIFYING THE RISK OF SWON?**

A. Yes. In addition to using a comparison group or proxy group to estimate the cost of equity, comparison companies (proxy companies) are used as a benchmark to satisfy the long-established guideline of providing a utility the opportunity to earn a return equal to that of



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similar risk enterprises. However, Mr. Hale did not present any evidence regarding the similarity, or dissimilarity, of risk between Staff's Group and SWON.

On pages 18-30 of my direct testimony I discussed numerous risk analyses of my Comparable Group and SWON. A risk analysis of SWON is essential in determining a fair rate of return for SWON because risk and return counter balance one another. That is, the greater the risk, the higher the required return and vice versa. Therefore, I do not believe the Commission can or should rely upon Mr. Hale's recommendations since Mr. Hale did not provide any risk assessment of SWON relative to Staff's Group.

**Q. IS THE COMPANY SIMILAR IN SIZE TO STAFF'S GROUP?**

A. No. Page 21 of my direct testimony details the large size difference between the SWON and my Comparable Group. Company size is an indicator of business risk and was in my direct testimony.

The large size difference between SWON and Staff's Group is an indicator of business risk recognized by commissions, credit analysts, and investors. 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. For example, SWON has two large industrial customers (Lockheed Martin and Sanmina Inc.) and these two customers represent about 66% of SWON's water sales. If SWON were to lose these customers, the impact on SWON would be tremendous. This risk factor is referred to as "customer concentration."

Moreover, Staff's Group has a more diverse geographic operation than SWON, and more economic, regulatory and customer diversification than SWON, which enables Staff's

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Group to be less susceptible to downturns associated with regional economic conditions, and less susceptible to adverse regulatory developments or eminent domain claims in any single jurisdiction.

Schedule 1 details the large size difference between the SWON and Staff's Group based on assets, revenues and capital. Company size is an indicator of business risk and is summarized in Table 1.

	2016		
	<u>Total</u> <u>Assets-Total</u> (Millions \$)	<u>Revenues</u> (Millions \$)	<u>Permanent</u> <u>Capital</u> (Millions \$)
Suez Water Owego-Nichols, Inc.	\$9.472	\$2.009	\$6.910
Staff's Water Group	3,809.220	723.367	2,301.759
Staff's Energy Group	31,907.238	7,407.904	18,756.732
Staff's Group Total	25,831.991	5,962.598	15,198.900
<u>Number of Times Large Than SWON</u>			
Staff's Water Group	402.2 x	360.1 x	333.1 x
Staff's Energy Group	3,368.7 x	3,687.6 x	2,714.3 x
Staff's Group Total	2,727.3 x	2,968.1 x	2,199.4 x

**Table 1**

As shown in Table 1, SWON is hundreds of times smaller than the Staff's Water Group, and thousands of times smaller than either Staff's Energy Group or Staff's Group. For example, Staff's Energy Group is 2,713.3-times to 3,687.6-times larger in size of SWON but Staff's Water Group is 333.1-times to 402.2-times larger in size of SWON. As a generalization, the smaller the average size of a company or group, the greater the risk. A smaller company

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requires the employment of proportionately less financial leverage (*i.e.*, debt and preferred capital) than a larger company to balance out investment risk. Accordingly, even if all other risk metrics were equal between the SWON and Staff's Group, but the Staff's Group was still 2,500-times the size of SWON, the Staff's Group's cost of common equity would understate SWON's cost of common equity.

The finance literature supports the fact that, as the size of a firm decreases, its risk and, hence, its required return increases. Dr. Thomas Zepp presented research on water utilities that support a small firm effect in the utility industry.<sup>6</sup> Moreover, Professor Brigham has indicated that smaller firms have higher capital costs than otherwise similar larger firms.<sup>7</sup> Mr. Hale included information from a credit rating agency, Standard & Poor's. Standard & Poor's documents that relationship between size and credit rating,

Company size and diversification often plays role. While we have no minimum size criterion for any given rating level, company size tends to be significantly correlated to rating levels. This is because larger companies often benefit from economies of scale and/or diversification, translating into a stronger competitive position. Small companies are, almost by definition, - more concentrated in terms of product, number of customers, and geography. To the extent that markets and regional economies change, a broader scope of business affords protection.<sup>8</sup> (Underline added.)

While we have no minimum size criterion for any given rating level, size and ratings do end up being correlated, given that size often provides a measure of diversification, and/or affects competitive positioning.<sup>9</sup> (Underline added.)

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<sup>6</sup> See Zepp (2002), "Utility Stocks and the Size Effect: Revisited", *Economics and Finance Quarterly*, 43, 578-582.

<sup>7</sup> See *Fundamentals of Financial Management*, 5th Edition, page 623.

<sup>8</sup> *Standard & Poor's, Corporate Ratings Criteria 2008*; pg. 22.

<sup>9</sup> *Standard & Poor's, Corporate Ratings Criteria 2008*; pg. 23.

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**Q. DO YOU BELIEVE STAFF’S GROUP IS A GOOD “PROXY” FOR ESTIMATING THE COST OF CAPITAL OR CAPITAL STRUCTURE FOR A WATER UTILITY?**

A. No. Staff’s Group is heavily weighted with energy companies, not water companies. Staff’s Group is comprised of 78% energy companies and only 22% water companies. Accordingly, Staff’s Group is better suited for use in estimating the cost of capital or capital structure for an energy utility since it is overly weighted with energy companies.

Mr. Hale included pages from one of Dr. Morin’s books which he cited as support for the selection and use of his large proxy group, the Staff’s Group. Dr. Morin qualified the use of the technique used by Mr. Hale in selecting the Staff’s Group by stating, “With the Cluster Analysis approach, comparable companies are **selected on the basis of "closeness" to the targeted entity in terms of such predetermined risk variables** as bond rating, after-tax interest coverage, equity ratio, total capital, and variability of operating income.”<sup>10</sup> Since he did not analyze SWON, he could not have considered “closeness” of variables to SWON. Had he done so, he would have most likely selected Staff’s Water Group companies, not Staff’s Energy Group companies.

In financial literature the terms “barometer group”, “comparable group”, “peer group” and “proxy group” are used interchangeably and they are defined as:

In investment research, peer group analysis is a vital part of establishing a valuation for a particular stock. The emphasis here is on comparing "apples to apples," which means that the constituents of the peer group should be fairly **similar to the company being researched**, particularly in terms of their **main areas of business and market capitalization**.<sup>11</sup>

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<sup>10</sup> (Bolding added), Exhibit\_\_\_(ASH-27), page 3 of 5.

<sup>11</sup> (Bolding added), <https://www.investopedia.com/terms/p/peer-group.asp> .

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**Q. DO INVESTORS VIEW STAFF'S WATER GROUP AND STAFF'S ENERGY GROUP SUBSTANTIALLY DIFFERENT FROM ONE ANOTHER?**

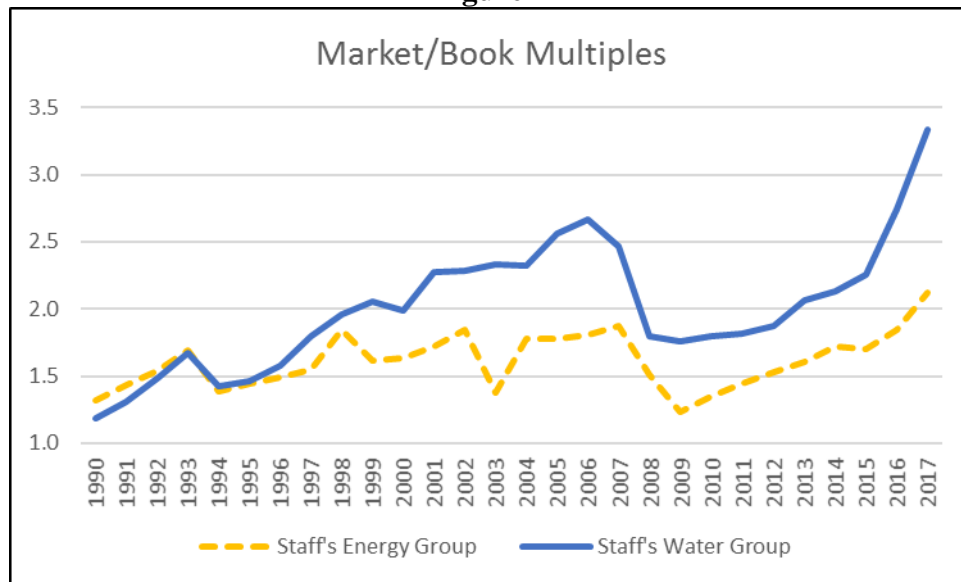
A. Yes. As shown on Schedule 2, the market values water companies differently than energy companies because each type of utility (water versus energy) has a unique business and financial profile. Schedule 2 shows recent dividend payout ratios ("Payout Ratios"), earned returns on average common equity ("ROEs"), price-earnings multiples ("P-E Multiples"), market-to-book multiples ("Market/Book Multiples"), and total market value of the shares of common stock ("Market Value") calculated by multiplying share price by the number of share on common stock outstanding for Staff's Water Group, Staff's Energy Group, and Staff's Group. Staff's Water Group's Payout Ratios are 13% lower than Staff's Energy Group and 10% less than Staff's Group. Staff's Water Group's ROEs are 80% higher than Staff's Energy Group and 53% higher than Staff's Group. The P-E Multiples for Staff's Water Group are 25% and 18% higher than Staff's Energy Group and Staff's Group, respectively. Similarly, the Market/Book Multiples for Staff's Water Group are 57% and 40% higher than Staff's Energy Group and Staff's Group, respectively. The difference between Staff's Water Group Market/Book Multiples of 3.34-times indicates the market values the Staff's Water Group 334% relative to their book value and only values the Staff's Energy Group 212% relative to their book value, which proves investors view Staff's Water Group and Staff's Energy Group substantially different from one another.

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**Q. HOW LONG HAVE INVESTORS' BEEN VALUING STAFF'S WATER GROUP DIFFERENTLY THAN STAFF'S ENERGY GROUP?**

A. Using Market/Book Multiples as measure for differences in investors' valuations, the substantial difference in investors' valuations of Staff's Energy Group and Staff's Water Group began over the last two years and really took off in the last year. Schedule 3 compares the Market/Book Multiples for Staff's Energy Group and Staff's Water Group since 1990. This information is shown graphically in Figure 1, below. As depicted in Figure 1, the Market/Book Multiples for Staff's Water Group are currently substantially higher than Staff's Energy Group proving the difficulties in relying on Staff's Energy Group, and hence Staff's Group, in estimating the cost of capital or capital structure for a water utility since the market values water companies and energy companies considerably different.

**Figure 1**

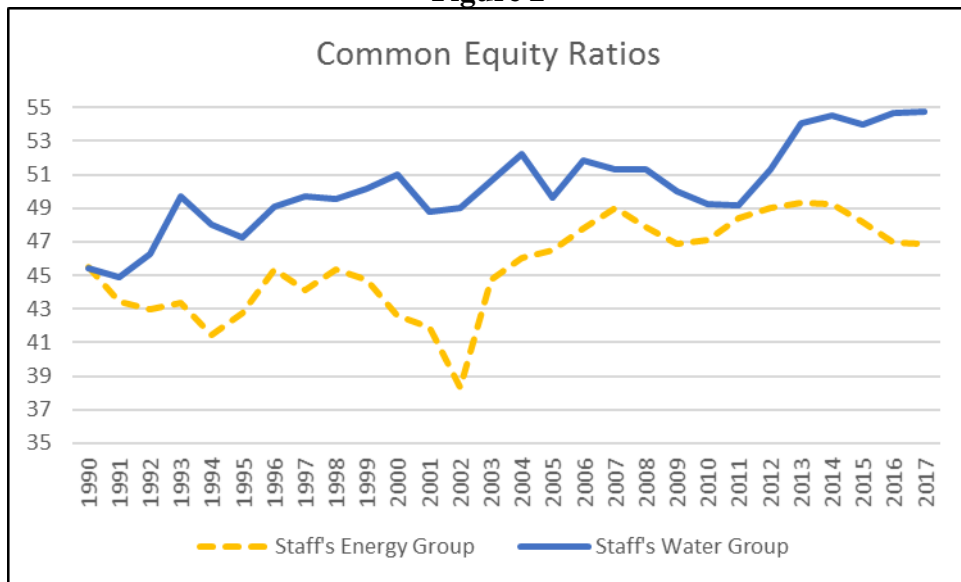


I believe some of the difference in investors' valuation assessment is a result of the significant difference in the way the Staff's Energy Group and Staff's Water Group are

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capitalized. Schedule 3 compares the common equity ratios for Staff's Energy Group and Staff's Water Group since 1990. This information is shown graphically in Figure 2, below. As shown in Figure 2, the common equity ratios for Staff's Water Group are currently higher than Staff's Energy Group and has been for the last six years. Currently, the Staff's Water Group's common equity ratio is 54.7% and the Staff's Energy Group's common equity ratio is 46.9%, a 7.9 percentage point difference.

**Figure 2**



**Q. SHOULD STAFF'S GROUP BE USED TO DETERMINE THE COST OF COMMON EQUITY OR CAPITAL STRUCTURE FOR THE COMPANY?**

A. No. Staff's Group is too heavily weighted with energy companies. The information present in Schedules 1, 2 and 3, Table 1, and Figures 1 and 2 all prove Staff's Group is not dependable to use to determine the cost of common equity or capital structure for SWON. This information confirms there are large measurable difference between Staff's Energy Group and Staff's Water Group. This conclusion of lack of reliability will be proven and

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highlighted further when Mr. Hale's common equity cost rate models are separated between Staff's Energy Group and Staff's Water Group later in this testimony.

Mr. Hale's testimony discusses "sample size" in support of using Staff's Group. A large "sample size" is meaningless when the sample is not compatible with the subject, SWON. The evidence is clear, the market does not assess Staff's Energy Group and Staff's Water Group similarly. Investors do not evaluate water utilities by looking at energy utilities and neither should Staff or the Commission.

**CAPITAL STRUCTURE**

**Q. WHAT CAPITAL STRUCTURE RATIOS DOES STAFF RECOMMEND TO BE USED TO DEVELOP THE COMPANY'S OVERALL RATE OF RETURN?**

A. Mr. Hale recommends a hypothetical capital structure of 54% long term debt and 46% common equity based on his calculated average capital structure for the Staff Group at year-end 2016.<sup>12</sup> In reviewing Mr. Hale's workpapers I found he included short-term debt in his determination of a hypothetical capital structure, thus reducing the common equity ratio financing rate base. Eliminating the short-term debt from his calculated average capital structure for the Staff Group at year end 2016 produces a hypothetical capital structure of 52.5% long term debt and 47.5% common equity for the Staff Group base on Staff's data.<sup>13</sup>

As documented previously, Staff's Group is heavily weighted with energy companies, not water companies. Accordingly, Staff's Group is better suited for use in estimating the capital structure for an energy utility since it is overly weighted with energy companies.

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<sup>12</sup> Exhibit\_\_(ASH-35), Page 1 of 1

<sup>13</sup> Staff's recommended capital structure for SWON is based on permanent capital and excludes short-term debt per Exhibit\_\_(ASH-35).



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Based upon Mr. Hale's workpapers, the Staff's Water Group's common equity ratio was 53.8% and the Staff's Energy Group's common equity ratio was 45.7% at year-end 2016 suggesting a hypothetical capital of 54.3% long term debt and 45.7% common equity based on Staff's Energy Group and 46.2% long term debt and 53.8% common equity based on Staff's Water Group at 2016.

Schedule 5 shows the most recent (9/30/17) capital structure ratios for Staff's Water Group and Staff's Energy Group. Currently, the Staff's Water Group's common equity ratio is 54.7% and the Staff's Energy Group's common equity ratio is 46.9% suggesting a hypothetical capital structure of 53.1% long term debt and 46.9% common equity based on Staff's Energy Group and 45.3% long term debt and 54.7% common equity based on Staff's Water Group at 9/30/17. A comparison of my recommended capital structure ratios for SWON's to those recently employed (at 9/30/17) by Staff's Water Group and Staff's Energy Group and Mr. Hale's recommendation for SWON are shown in Table 2.

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	Company's Recommendation For SWON	Staff's Water Group	Staff's Energy Group	Staff's Recommendation For SWON
Long Term Debt	45.7%	45.2%	52.3%	54.0%
Preferred Stock	0.0%	0.1%	0.8%	0.0%
Common Equity	<u>54.3%</u>	<u>54.7%</u>	<u>46.9%</u>	<u>46.0%</u>
Total	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>

**Common Equity Ratios**

Recommendation	Ratio
Company's Recommendation	54.3%
Staff's Water Group	54.7%
Staff's Energy Group	46.9%
Staff's Recommendation	46.0%

**Table 2**

As is evidenced by the information shown in Table 2, my recommended capital structure ratios for SWON's are like those employed by Staff's Water Group while Mr. Hale's recommendation for SWON are similar to those employed by Staff's Energy Group. Moreover, my recommended capital structure ratios for SWON's are based on the entity raising the long term debt for SWON whereas Mr. Hale's recommendation is based on a hypothetical.

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It is appropriate to use the capital structure of the entity that does the financing for a regulated utility if the actual capital structure of the entity that does the financing is consistent with the capital structures of the publicly-traded proxy companies that operate in same line of business. A hypothetical capital structure shown only be used if the financing entity's capital structure is inconsistent relative to the capital structures of the companies that operate in same line of business.

As noted before, my recommended capital structure ratios for SWON's are like those employed by Staff's Water Group. Further, since Mr. Hale's recommended capital structure ratios are inconsistent with the capital structures of the publicly-traded water companies Mr. Hale's recommended capital structure ratios should not be adopted by the Commission.

**COST OF DEBT**

**Q. WHAT CHANGES DID STAFF RECOMMEND TO THE COMPANY'S PROPOSED 5.17% LONG-TERM COST RATE?**

A. Mr. Hale used a 4.08% interest rate for assumed debt refinancing for debt issues which mature by July 31, 2019. These changes produced a weighted average embedded cost of debt 5.04% which is Mr. Hale's debt cost recommendation for SWON.

**Q. DO YOU AGREE WITH MR. HALE'S DEBT COST RECOMMENDATION FOR SWON?**

A. No. I do believe a 4.08% interest rate is reasonable for those debt issues which mature in the next few months but not for those debt issues which mature afterwards. Further, Mr. Hale did not include any allowance for issuance expenses for the assumed debt refinancing for debt issues which mature by July 31, 2019. The issuance expenses for the assumed debt

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refinancings will likely add 0.06% to 0.12% to the effective cost of each 4.08% interest rate issue making each issues' effective cost 4.14% to 4.20%, not 4.08%.

Mr. Hale relied upon the Blue Chip Financial Forecast in his testimony when he was discussing GDP growth.<sup>14</sup> Blue Chip Financial Forecast project capital costs rates increasing substantially from their current levels. Table 3 shows the forecasted increase in interest rates published in the June 1, 2017 Blue Chip Consensus Forecasts for the period 2019 to 2021. As shown in Table 3, consensus forecasts show interest rates are expected to increase over 150 basis points from current levels. If interest rates were to increase as predicted, Mr. Hale's 4.08% interest rate is projected to be 5.48% to 5.78%, not 4.08%.

<u>Blue Chip Financial Forecasts Long-Range Survey (6/1/17)</u>				
	Latest Qtr (12/1/17)	Consensus Forecasts (6/1/17)		
	<u>Fourth Qtr 2017</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<u>Interest Rates</u>				
Prime Rate	4.30	5.60	5.90	5.90
3-mo. Treasury Bills	1.20	2.50	2.80	2.80
10 Year Notes	2.40	3.60	3.80	3.80
30 Year Notes	2.90	4.20	4.30	4.40
Aaa Corporate Bond Yield	3.80	5.20	5.40	5.40
Baa Corporate Bond Yield	4.40	6.10	6.30	6.30

**Table 3**

On Schedule 6 I recalculated the effective cost of debt reflecting the average 155 basis point increase in forecasted interest rates (average increase for Aaa and Baa bonds) and

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14 Exhibit\_\_ (ASH-21)

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included 0.06% for issuance expenses. As shown on Schedule 6, I am forecasting a 5.19% cost of debt for the rate year ending July 31, 2019 based on Mr. Hale's methodology. However, given the similarities in the debt cost rates (5.19% v. 5.16%), I still recommend using an embedded debt cost rate of 5.16% for SWON because it is based on actual known data, not conjecture or forecasts. However, if more known information becomes available then it should be reflected in the debt cost rate.

**COST OF EQUITY**

**Q. YOU PREVIOUSLY TESTIFIED FORECASTERS BELIEVE CAPITAL COSTS RATES WILL INCREASE SUBSTANTIALLY FROM THEIR CURRENT LEVELS. ARE THERE OTHER FACTORS THAT INDICATE CAPITAL COSTS RATES WILL INCREASE MARKEDLY FROM THEIR CURRENT LEVELS?**

A. Yes, the Federal Reserve increased interest rates three times in 2017, including the most recent change in December 2017. Prior to the new tax law, the Federal Reserve forecasted another three rate increases in 2018 and two in 2019. Additionally, given the markets' positive reaction to the recently announce changes in tax law, additional rate hikes may be forth coming in reaction the tax law's economic stimulus. The tax law's economic stimulus and rate hikes will put upward pressure on long term interest rates.

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**Q. HOW DID STAFF DETERMINE THEIR RECOMMENDED COST OF EQUITY FOR THE COMPANY?**

A. Mr. Hale's common equity estimate for SWON is based on applying a two-thirds weighting to his DCF analysis of Staff's Group and a one-third weighting to his CAPM analysis of Staff's Group. Mr. Hale's DCF analysis and CAPM analysis are similar to, or the same as, the Staff's methodology that has been used since the early 1990s "Generic Financing Proceeding." It should be noted that Staff acknowledged in recent rate case proceedings that their methodology may not be producing reasonable results under current market conditions.

I believe some of the current market conditions may include the Federal Reserve's distortion of the price of risk due (explained at pages 30-33 of my direct testimony), the current artificial interest rate levels and the fact that the market values are substantially above book value as is evidenced by the 2.12-times Market/Book Multiple for Staff's Energy Group and the 3.34-times Market/Book Multiple for Staff's Water Group.

**Q. WHY DO CURRENT MARKET CONDITIONS IMPACT STAFF'S COST OF EQUITY METHODOLOGIES MORE SO CURRENTLY THAN IN PREVIOUS PERIODS?**

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.<sup>15</sup> The American Society of Appraisers, ASA Business Valuation Standards,

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<sup>15</sup>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>.

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2009, and the National Association of Certified Valuation Analysts, Professional Standards, 2007, use the same definition:

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.

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 in Table 4, there is a large difference in the market capitalization ratios and the book capitalization for both Staff's Water Group and Staff's Energy Group. This difference in market values and book values results in debt/equity ratios based on **market value of 20%/80%** (debt/equity) verses 45%/55% (debt/equity) based on book value for Staff's Water Group and **market value of 36%/64% (debt/equity)** verses 52%/48% (debt/equity) based on book value for Staff's Energy Group as shown on Table 4 (developed on Schedule 7).

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<u>Differences in Book Value and Market Values for the Staff's Water Group and Staff's Energy Group</u>		
	Recent Book Value Capitalization Ratios <u>(9/30/17)</u>	<b>Recent Market Value Capitalization Ratios</b>
<u>Staff's Water Group:</u>		
Long Term Debt	45.2 %	<b>20.4 %</b>
Preferred Stock	0.1	<b>0.1</b>
Common Equity	<u>54.7</u>	<u><b>79.5</b></u>
Total	<u><u>100.0 %</u></u>	<u><u><b>100.0 %</b></u></u>
<u>Staff's Energy Group:</u>		
Long Term Debt	52.3 %	<b>35.5 %</b>
Preferred Stock	0.8	<b>0.5</b>
Common Equity	<u>46.9</u>	<u><b>64.0</b></u>
Total	<u><u>100.0 %</u></u>	<u><u><b>100.0 %</b></u></u>

**Table 4**

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.

**Q. HOW HAVE MARKET CONDITIONS CHANGED SINCE THE STAFF'S COST OF EQUITY METHODOLOGIES WERE DEVELOPED IN THE EARLY 1990S?**

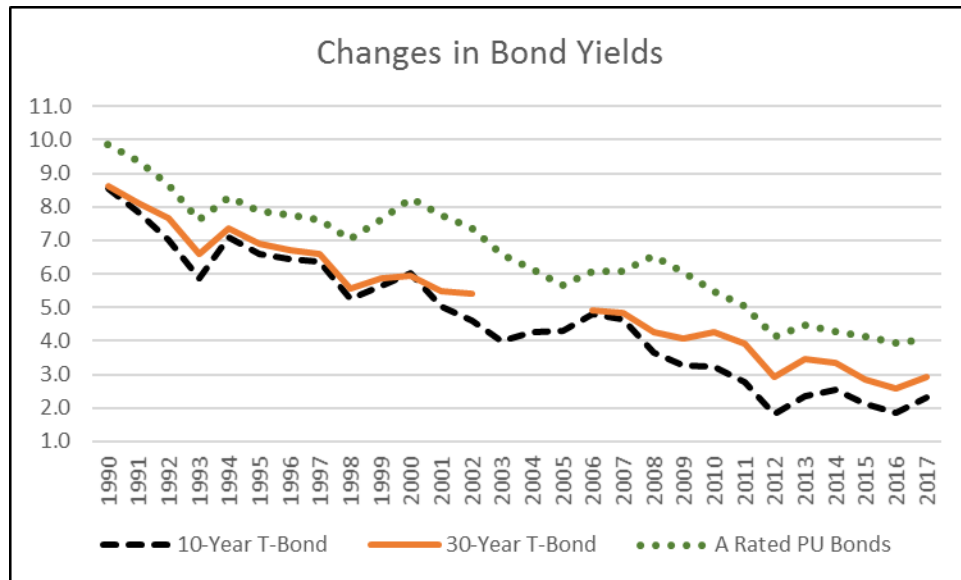
A. Figures 1 and 2 discussed previously show the dramatic changes in Market/Book Multiples and Common Equity Ratios for Staff's Water Group and Staff's Energy Group that have occurred since 1990. Similar metrics of Payout Ratios, ROEs, P-E Multiples, and Market



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Value for Staff's Group tell the same story that we are not still in the 1990s market environment. Figure 3 tells an analogous story but from the view point of changes in long term bond yields.

**Figure 3**



Capital cost rates have changed since the 1990s and some of the changes can be attributed to the Federal Reserve's distortion of the price of risk due (explained at pages 30-33 of my direct testimony) which have produced the current artificial interest rate levels and attributed to the high market values. That being said, the known and measurable cost of capital for a public utility has not varied much between 2012 to date as is evidenced by the yield on A rated public utility bonds, shown in Figure 3, which has averaged 4.16% during this period.<sup>16</sup>

<sup>16</sup> See Schedule 8 for interest rate data supporting Figure 3.

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**Q. STAFF’S DCF METHOD OR MODEL IS SHOWN ON EXHIBIT ASH-20. DO YOU AGREE STAFF’S DCF METHODOLOGY?**

A. No, I do not. Mr. Hale’s DCF model is a “two-stage” DCF. I believe a single-stage model, such as the one I used in my direct testimony, is best suited for companies that operate in a mature long-standing industry, such as the industry that water utilities operate in. Currently, there are no major technological improvements that are likely to drastically shift the growth of the water industry. As such, the constant-growth, or single-stage, DCF provides a reasonable DCF-derived market cost rate.

I believe a multi-stage growth model, or “two-stage” DCF, is more appropriate for a company or industry characterized as being one in a developmental stage or one in a decaying stage of growth. For example, an industry in a developmental stage might be the solar-power industry, while an industry in a decaying stage might be the newsprint industry. It has been my experience that the single-stage model is the most widely utilized version of the DCF used in public utility rate regulation.

Mr. Hale’s DCF model is a “two-stage” DCF, or multi-stage growth model, which uses Value Line’s projected dividends for the first stage’s growth, and the second stage’s growth utilizes the sustainable growth methodology for determining the growth rate component. Mr. Hale calculated sustainable growth for Staff’s Group based on a projected retention of earnings and growth in the amount of common stock which Value Line’s projects for 2021. Mr. Hale “checked” his sustainable growth rate by comparing it to the economy’s GDP growth projected by Blue Chip Financial Forecasts.

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**Q. IS STAFF CORRECT TO ASSUME THAT STAFF'S WATER GROUP WILL GROW AT THE SAME RATE AS THE NATIONAL ECONOMY?**

A. No. At a minimum, the investor owned water industry will continue to grow faster than the overall economy for the next several decades, if not for the next century. Currently, government-controlled establishments manage or own about 86% of all water supplies. The 14% of water supplies that are managed or owned by investor owned utilities ("IOU") consist of companies with common stock that are either actively traded or inactively traded as well as companies that are closely held, or not publicly traded. The percentage of all water supplies that are managed or owned by larger IOUs, and the percentage of wastewater systems managed or owned by larger IOUs, will increase over time as the cost of infrastructure replacement and regulatory compliance becomes prohibitive for Government-controlled establishments and small IOUs.

Clearly, there are ample new growth opportunities available for IOUs to grow faster than the national economy through acquisition of Government controlled water/wastewater establishments and small IOUs.

**Q. DO INVESTORS HAVE REASONS TO EXPECT STAFF'S WATER GROUP TO GROW AT A HIGHER RATE THAN THE NATIONAL ECONOMY?**

A. Yes, I believe investors in water companies have reasons to expect their investment to grow at a higher rate than the economy. However, I do not believe investors in water companies expect their investment to grow faster than the economy over the long-term. The distinction between these two opinions involves the use of the term "long-term." My use of the term "long-term" refers to the post-acquisition period growth.

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The acquisitions and the EPA-mandated capital improvements within the water industry began over the last 10 to 15 years. Investment advisory services project a similar growth for the water industry due to consolidation and due to both required and mandated investments:

For decades, insufficient capital was spent on upgrading and modernizing the country's water infrastructure. As we enter the second decade of the century, many of the pipelines installed following World War II, when the country was in expansion mode, are antiquated and need replacing. Indeed, the American Society of Civil Engineers (ASCE) reported that the most underfunded part of America's infrastructure is the water sector at 70%. A similar engineering group reported that **the price to bring the system up to date would be \$1 trillion over the next 25 years.**

As companies begin the process of replacing old pipes, projected capital spending increase significantly. How the required capital expenditures water systems be funded? External financing will most likely be necessary. This means that balance sheets will expand as the industry issues more stock and debt. Should the stock market continue to rise, at least utilities may be raising new equity when their prices are near or at all-time highs. Moreover, though interest rates have backed up recently at the longer end of the yield curve, rates remain relatively low.

**There are tens of thousands of small municipally run water utilities scattered throughout the country. Faced with economic difficulties, many of these systems find it easier to sell themselves to investor-owned entities that can use economies of scale to improve efficiencies.** Equally as important, public companies have access to the capital markets. Formerly, a mid-sized city could issue tax-free bonds at lower rates than Treasury bonds. Unfortunately, because of the recent problems that have roiled the municipal bond market, municipalities must pay interest rates on longer-term debt obligations that are comparable to those paid by taxable corporations.

In any case, **we have been surprised that the merger activity hasn't been more robust in the recent past. Nevertheless, over the next three- to five-year period, we expect the pace to accelerate.** (Bolding added)<sup>17</sup>

Staff's Water Group will likely growth faster than the economy for the next 30, 50, or 100

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<sup>17</sup> The Value Line Investment Survey, *Water Utility Industry*, January 17, 2014, pg. 1773.

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years. This will occur as long as mandated capital improvements are required and consolidation and acquisition occurs.

**Q. WHAT EVIDENCE DO YOU HAVE TO VERIFY HIGHER EXPECTED GROWTH FOR STAFF'S WATER GROUP?**

A. This can be seen by view the information shown on page 2 of Schedule 9. Schedule 9 is a reproduction Mr. Hale's Exhibit\_\_\_\_(ASH-20). The only changes I made to Mr. Hale's s Exhibit\_\_\_\_(ASH-20) are the bottom three rows where I separated his information between Staff's Water Group, Staff's Energy Group and Staff's Group. As shown on page 2 of Schedule 9, Staff's Water Group's DPS growth of 7.98% is 38% higher than Staff's Group's DPS growth of 5.76% and is 55% higher than Staff's Energy Group's DPS growth rate of 5.15%. Further, Staff's Water Group's sustainable growth of 7.43% is 43% higher than Staff's Group's sustainable growth of 5.21% and is 62% higher than Staff's Energy Group's sustainable growth rate of 4.16%.

**Q. IS THIS HIGHER EXPECTED GROWTH FOR STAFF'S WATER GROUP REFLECTED IN THEIR STOCK PRICES?**

A. Yes, I believe this higher expected growth for Staff's Water Group as compared to Staff's Energy Group may be one of the reasons for the divergence in their Market/Book Multiples. Figure 4 shows a monthly comparison of Market/Book Multiples of Staff's Water Group and Staff's Energy Group.<sup>18</sup> As shown in Figure 4, the large divergence in Market/Book Multiples appears to have begun in earnest in 2015. The percentage of divergence shown in

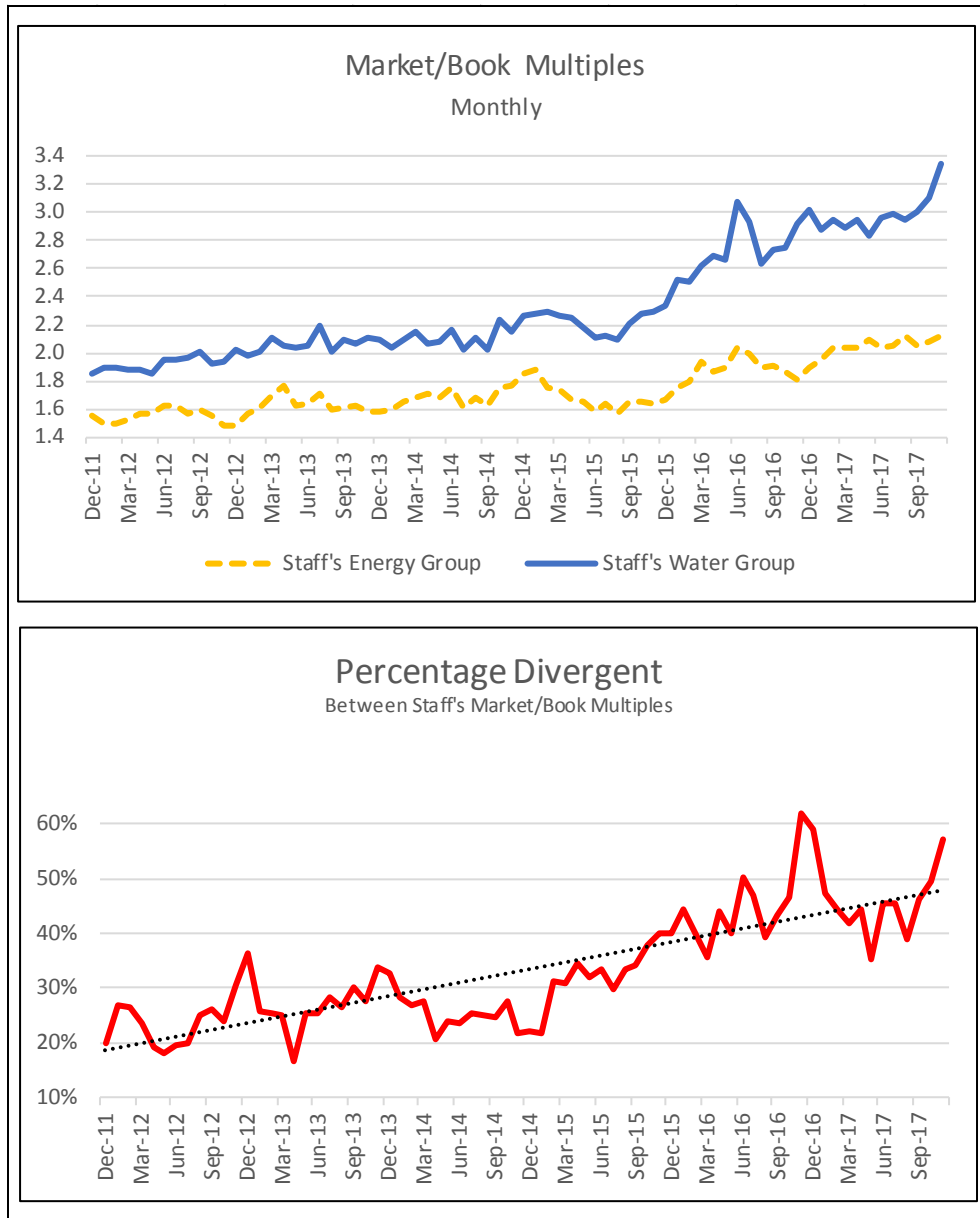
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<sup>18</sup> See Schedule 10 for the data supporting Figure 4.

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the bottom of Figure 4 was calculated by dividing the Market/Book Multiples of Staff's Water Group and the Market/Book Multiples Staff's Energy Group.

**Figure 4**



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**Q. IS THE HIGHER EXPECTED GROWTH FOR STAFF'S WATER GROUP REFLECTED IN THEIR COST OF CAPITAL?**

A. Yes, based on Staff's DCF model. This can be seen by view the information shown on page 2 of Schedule 9 discussed previously. As shown on page 2 of Schedule 9, Staff's Water Group DCF cost rate is 9.47% is 111 basis points higher than Staff's Group's DCF cost rate of 8.36% and is 142 basis points higher than Staff's Energy Group's DCF cost rate of 8.05%.

**Q. DO YOU BELIEVE STAFF'S MARKET VALUE DCF RECOMMENDATION IS BELOW THE ZONE OF REASONABLENESS?**

A. Yes. Mr. Hale improperly relied upon growth rates that he calculated. He subjectively ignored the investor influencing growth rates of security analysts and instead, calculated his own growth rates. Mr. Hale relied upon internal growth rates. Internal growth measures growth in book value, not stock price. Growth in book value is meaningless given today's relatively high Market/Book Multiples and therefore, internal growth is not a good proxy for investors' growth expectations.

**Q. DO YOU HAVE ANY OTHER COMMENTS REGARDING STAFF'S DCF MODEL SHOWN ON SCHEDULE 9?**

A. Yes. Staff's sustainable growth rate is calculated using a projected return on equity. As shown on page 2 of Schedule 9, Staff's Water Group's projected return on equity of 12.43% is 114 basis points higher than Staff's Group's projected return on equity of 11.29% and is 146 basis points higher than Staff's Energy Group's projected return on equity 146%. Staff's Water Group's higher projected return on equity than Staff's Group and Staff's Energy Group verifies the fact that Staff's Water Group has a higher cost of capital than

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Staff's Group and Staff's Energy Group. If the Commission is going to rely upon Staff's DCF methodology, I recommend using Staff's Water Group's DCF cost rate of 9.47%.

**Q. PLEASE EXPLAIN STAFF'S CAPM METHODOLOGY.**

A. Yes. Mr. Hale averaged the results of the traditional CAPM and zero-beta CAPM to arrive at his CAPM derived cost rate recommendation. The three input variables in Mr. Hale's CAPM are the risk-free rate, the beta of Staff's Group, and the market risk premium. The difference between the traditional CAPM and zero-beta CAPM involves the weighting applied to the aforementioned three inputs variables.

**Q. DO YOU AGREE WITH STAFF'S CAPM METHODOLOGY?**

A. No. The two areas of disagreement I have with Mr. Hale's CAPM relate to his risk-free rate and the market risk premium. Mr. Hale's risk-free rate is the monthly average of the 10-year and 30-year Treasury bond yields over a recent three-month period. This calculation resulted in an average risk-free rate of 2.57%. Mr. Hale rationale for averaging 10-year and 30-year Treasury bonds is "because it approximates most investors' time horizon." However, financial theory indicates the term matching of the risk-free rate should be based on the life of the asset, not the time horizon of the investor. In this case, water assets have a much longer life than the 20 years that results from averaging 10-year and 30-year bonds. Had Mr. Hale used the more appropriate 30-year Treasury bonds his risk-free rate would have been 2.85%, not 2.57%.

Another area of disagreement I have with Mr. Hale's risk-free rate is the fact that he used only historical yields not projected yields. As mentioned previously, Mr. Hale relied upon the Blue Chip Financial Forecast in his testimony when he was discussing GDP growth.



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The Blue Chip Financial Forecast that were discussed regarding Table 3 shows projected capital costs rates increasing substantially from their current levels. As shown in Table 3, consensus forecasts show interest rates are expected to increase over 150 basis points from current levels. If interest rates were to increase as predicted, Mr. Hale's 2.57% risk-free rate would be about 3.92%.

The last area of disagreement I have with Mr. Hale's CAPM is his market risk premium. I believe Mr. Hale should have used the most noted asset return studies and resultant risk premium studies that are published, by Ibbotson Associates. The Ibbotson Associates market risk premium are documented in my direct testimony.

**Q. HOW WOULD STAFF'S CAPM RESULTS CHANGE IF STAFF USED BLUE CHIP FINANCIAL FORECAST'S PROJECTED INTEREST RATES SHOWN IN TABLE 3?**

A. Mr. Hale's CAPM average of 8.75% for Staff's Group, shown on Exhibit\_\_\_(ASH-22), would be 9.13%. The calculation of the 9.13% CAPM for Staff's Group is shown on page 2 of Schedule 11.

**Q. WHAT INFORMATION IS SHOWN ON SCHEDULE 11?**

A. Schedule 11 is a reproduction Mr. Hale's Exhibit\_\_\_(ASH-16). The only changes I made to Mr. Hale's Exhibit\_\_\_(ASH-16) are the right-hand columns where I added information for Staff's Water Group and Staff's Energy Group. Page 2 of Schedule 11 is like page 1 but uses the average Blue Chip Financial Forecast's projected risk-free rates shown in table 3.

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**Q. WHAT ARE THE CAPM DERIVED COST OF EQUITY SHOWN ON SCHEDULE 11?**

A. As shown on page 1 of Schedule 11, Staff's Water Group's average CAPM of 9.07% is 32 basis points higher than Staff's Group's average CAPM of 8.75% and is 37 basis points higher than Staff's Energy Group's average CAPM of 8.70%. The changes in the CAPM cost rates shown on page 1 of Schedule 11 are a result of Staff's Water Group being considered riskier than either Staff's Group or Staff's Energy Group as is evidenced by their higher beta. Beta is a measure of volatility or market risk, the higher the beta, the higher the market risk. Staff's Water Group's beta is 0.74, 6% riskier than Staff's Group beta of 0.70 and 7% riskier than Staff's Energy Group beta of 0.69.

Page 2 of Schedule 11 uses the average Blue Chip Financial Forecast's projected risk-free rates shown in table 3. Using the average Blue Chip Financial Forecast's projected risk-free rates indicates the Staff's Water Group's average CAPM is 9.40% or 27 basis points higher than Staff's Group's average CAPM of 9.13% and is 31 basis points higher than Staff's Energy Group's average CAPM of 9.09%.

**Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE STAFF'S CAPM DERIVED COST OF COMMON EQUITY?**

A. Staff's CAPM methodology shows the Staff's Water Group is riskier than both Staff's Group and Staff's Energy Group. If the Commission is going to rely upon Staff's CAPM methodology, I recommend using Staff's Water Group's CAPM cost rate of 9.07%. If the Commission is going to rely upon Staff's CAPM methodology but concludes projected interest rates are appropriate, I recommend using Staff's Water Group's CAPM cost rate of

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9.40%.

**Q. PLEASE SUMMARIZE YOUR ANALYSIS OF STAFF'S COMMON EQUITY COST RATE MODELS WHICH PRODUCED HIS 8.5% COST OF COMMON EQUITY COST RECOMMENDATION.**

A. Mr. Hale's common equity cost of 8.5% is based on applying the results of a DCF analysis with two-thirds weighting, and CAPM analysis with a one-third weighting, to Staff's Group. Applying the same weightings to Staff's Water Group indicates a common equity cost of 9.34%, or 85 basis points higher than he found for Staff's Group. This analysis is shown on page 1 of Schedule 11. When projected risk-free rates are used in Mr. Hale's CAPM, and the same weightings are applied to Staff's Water Group, it produces a common equity cost of 9.45% as shown on page 2 of Schedule 11.

**Q. DID STAFF CHECK THE REASONABLENESS OF HIS COMMON EQUITY COST RATE RECOMMENDATION?**

A. Yes, Mr. Hale's checked the reasonableness of his common equity cost rate recommendation by comparing the spread between interest rates and authorized return rates on common equity for other utilities on Exhibit\_\_\_\_(ASH-25) and is discussed on pages 70 through 73 of his testimony. Specifically, Mr. Hale compared the yield of both 20-year Treasury bonds and A rate public utility bonds to authorized return rates on common equity for electric companies and for water companies. He found his 8.50% recommendation was 459 basis points higher than investors 3.91% current yield requirements for long-term A rated public utility bonds and 585 basis points higher than the 2.65% current yield requirement on 20-year Treasuries.

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**Q. DO YOU AGREE WITH THE METHODOLOGY THAT STAFF USED TO CHECK THE REASONABLENESS OF HIS COMMON EQUITY COST RATE RECOMMENDATION?**

A. No. Mr. Hale observed simple average “spread” between bond yields and authorized return rates on common equity over a 20-year period ended 2016. He did not account for changes in the “spread” which are known to occur with changes in interest rate levels. That is, the “spread” between bond yields and authorized return rates on common equity is inversely, or negatively, related to the level of interest rates. Namely, when interest rates are high, the “spread” between bond yields and authorized return rates on common equity narrows and when interest rates are low, the “spread” between bond yields and authorized return rates on common equity increases. A similar occurrence of an inverse relationship is found in risk premiums and market premiums found in Risk Premium models and CAPM models, respectively.

Schedule 12 was compiled from data shown on Exhibit\_\_\_(ASH-25) and proves the negative relationship between interest rate levels and the resulting “spread.” Page 1 of Schedule 12 shows the negative relationship between interest rate levels and the resulting “spread”. This was found by sorting the 20-year period, 1997 to 2016, bond yields based on the interest rate level of 20-year Treasury bonds from lowest interest rate to highest interest rate and separating the results into four equal groups.

During the period 1997 to 2016, the 5 years with the lowest interest rates (periods 1 to 5) 20-year Treasury bonds had an average yield of 2.78% and an average “spread” of 7.13% while the lowest interest rates long-term A rated public utility bonds had an average yield of

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4.19% and an average “spread” of 5.73%.<sup>19</sup> A similar process was followed for each 5-year period. The “spreads” shown in columns F and G decrease in value as interest rates increase during each succeeding 5-year period. The analysis shown on Page 1 of Schedule 12 indicates a 9.64% authorized return rate on common equity based on a 3.91% yield on A rated public utility bonds and a 9.78% authorized return rate on common equity based on a 2.65% yield on 20-year Treasury bonds. These indicated authorized return rate on common equity are more than 100 basis points higher than Mr. Hale’s recommended 8.50% cost of equity.

Page 2 of Schedule 12 uses a regression equation to determine the proper “spread” relative to Mr. Hales current interest rates. On page 2 of Schedule 12, the “spreads” between authorized return rate on common equity were also regressed against both A rated public utility bond yields and 20-year Treasury bonds yields (Columns D and E). Mr. Hale’s current A rated bond yields of 3.91% and 2.65% 20-year Treasury bonds yields were then entered into the results of the regression equations to produce a predicted cost of equity. The predicted cost of equity ranges from 9.80% to 9.86% and averages 9.83% or 133-basis points higher than Mr. Hale’s recommended 8.50% cost of equity.

Mr. Hale also reviewed 10 years (2007-2016) of the yield of both 20-year Treasury bonds and A rate public utility bonds compared to authorized return rates on common equity for water companies. I used a similar analysis as that which is shown on page 2 of Schedule 12 but for only 10 years of authorized return rates on common equity for water companies

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<sup>19</sup> This 5-year period resembles Mr. Hale’s interest rate environment of 3.91% yield on A rated public utility bonds and the 2.65% yield on 20-year Treasuries discussed previously.

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that Mr. Hale had data for. Mr. Hale's current A rated bond yields of 3.91% and 2.65% 20-year Treasury bonds yields were then entered into the results of the regression equations to produce a predicted cost of equity. The predicted cost of equity ranged from 9.70% to 9.76% and averages 9.73% or 123-basis points higher than Mr. Hale's recommended 8.50% cost of equity.

**Q. PLEASE SUMMARIZE YOUR COMMON EQUITY COST RATE RECOMMENDATION FOR SWON.**

A. Based upon the results of my entire analysis contained in my direct testimony, I conclude the SWON's current common equity cost rate is at least 10.25%.<sup>20</sup> 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 which range from 10.5% to 14.0%. The range of the projected returns suggests that my recommendation that SWON be permitted an opportunity to earn 10.25% is reasonable, if not conservative.

In reviewing Mr. Hale's testimony, I found Staff's Group is heavily weighted with energy companies, not water companies. Staff's Group is comprised of 78% energy companies and only 22% water companies. Accordingly, Staff's Group is better suited for use in estimating the cost of capital or capital structure for an energy utility since it is overly weighted with energy companies.

Mr. Hale's own data for Staff's Water Group shows a DCF cost rate of 9.47% and an average CAPM of 9.07%. Using the average Blue Chip Financial Forecast's projected risk-

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<sup>20</sup> It should be noted that my current analysis contained in Exhibit (HW-1) supports a cost of common equity of 10.25% for the Company. The Company's filing includes a 9.3% a cost of common equity to minimize the requested revenue increase.

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free rates indicates the Staff's Water Group's average CAPM is 9.40%. Overall, applying Mr. Hale's same weightings to the results of the DCF and CAPM models for Staff's Water Group indicates a common equity cost of 9.34%. When projected risk-free rates are used in Mr. Hale's CAPM, and the same weightings are applied to Staff's Water Group, it produces a common equity cost of 9.45% before any investment risk differences between Staff's Water Group and SWON are considered.

Mr. Hale checked the reasonableness of his commendation by looking at the historical "spreads" between bond yields and authorized returns on equity. I found he did not account for changes in the "spread" which are known to occur with changes in interest rate levels. Correcting for this oversight and using Mr. Hale's own data I found the cost of equity ranges from 9.80% to 9.86% and averages 9.83%.

In reviewing Mr. Hale's exhibits I found the following pertinent information reported in the press regarding recent authorized returns on common equity for other utilities:

For cases decided in the first five months of 2017, the average ROE authorized for water utilities was 9.43%, as compared to 9.68% for cases decided in calendar-2016. By comparison, the average ROE approved in cases decided for natural gas utilities in the first five months of 2017 was 9.44%, compared to 9.50% in 2016. Including returns used in limited issue rider cases, electric utilities were authorized an average ROE of 9.77% in cases decided in the first five months of 2017, comparable to 2016 results.<sup>21</sup>

**Q. HOW DO YOU REFLECT THE INVESTMENT RISK DIFFERENCE BETWEEN THE SWON AND STAFF'S GROUPS?**

A. The direction of the investment risk adjustment on common equity cost rates is clearly

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<sup>21</sup> Exhibit\_(ASH-26), page 1 of 5.

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known. A specific quantification of risk differences is based on the SWON's implied BBB credit profile even though the evidence indicates the SWON's credit rating may be below BBB (*i.e.*, BB).<sup>22</sup> An implied bond rating of BBB is a full bond rating below the bond rating of Staff's Groups. The difference in bond rating between the SWON and Staff's Groups suggests a minimum 25-basis point difference in long-term debt cost rates based upon the yield spread of A and BBB rated public utility debt.

**RESPONSE TO STAFF'S CRITICISM OF MR. WALKER'S TESTIMONY**

**Q. DO YOU HAVE ANY RESPONSE TO STAFF'S TESTIMONY REGARDING "SIZE ADJUSTMENT" IN THE CAPM?**

A. Yes. Investors prefer liquidity to lack of liquidity. Accordingly, a share in a business is worth more if it is easily marketable or, conversely, worth less if it is not. Privately held water utilities such as SWON are worth less than publicly traded water utilities. Further, publicly traded water utilities are not as marketable as the large companies which comprise the S&P 500. The size premium used in the CAPM accounts for some of these differences.

**Q. IS THE USE OF THE SIZE PREMIUM WIDELY ACCEPTED BY THE ACADEMIC COMITY AND THE FINANCIAL COMMUNITY?**

A. Yes. Since size is a recognized and meaningful element of risk, it is appropriate to reflect that risk in a company's cost of equity. Credit rating agencies recognize that size impacts credit rating. Valuation professionals and courts recognize the use of a size premium.

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<sup>22</sup> SWON has two large industrial customers (Lockheed Martin and Sanmina Inc.) and these two customers represent about 66% of SWON's water sales. If SWON were to lose these customers, the impact on SWON would be tremendous. This risk factor is referred to as "customer concentration."



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Mr. Hale cites a 1993 article by *Wong* to support for his assertion that the size premium is not applicable to utilities. However, *Wong's* conclusion is specifically rebutted by a 2002 article by T. M. Zepp.<sup>23</sup> In the *Zepp* article he explains that size premium does exist and presented research on water utilities that support a small firm effect. Additional support for the use of the size premium for utilities is also found in a 1995 article by M. Annin.<sup>24</sup>

**Q. STAFF QUESTIONED THE USE OF PROJECTED EPS GROWTH RATES. WHY DO YOU BELIEVE PUBLISHED PROJECTED EPS GROWTH RATES ARE SUPERIOR TO STAFF'S GROWTH RATES?**

A. Published projected EPS growth rates are used primarily by investors. Further, academic studies<sup>25</sup> verify the superiority of analysts' EPS growth forecasts over derived growth rates in predicting stock prices. Mr. Hale developed unrealistically low DCFs through the use of a low growth estimate. The market-required cost of equity represents what the market will pay for a stock based on investors' expectations of expected future growth. Investors' expectations of expected future growth are not based upon Mr. Hale's unique growth rates; they are based on investors' expectations of expected future growth.

For this reason, analysts' projections of future growth prospects for utilities are required. Analysts' EPS growth projections are not required because they will necessarily prove correct. Rather, analysts' EPS projections of future growth prospects are required

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<sup>23</sup> See Zepp (2002), "Utility stocks and the size effect: revisited", *Economics and Finance Quarterly*, 43, 578-582.

<sup>24</sup> See Annin (1995), "Equity and the Small Stock Effect", *Public Utilities Fortnightly*, October 15, 1995, at 42-43.

<sup>25</sup> Gordon, David, A., Gordon, Myron, J., and Gould, Lawrence, I.A Choice Among Methods of Estimating Share Yield, @ *The Journal of Portfolio Management*, 50-55, Spring 1989.

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because real investors rely on them more than any other source. It is irrelevant whether analysts are inherently over-or-under optimistic or pessimistic. The analysts' forecasts are relied upon by investors when they price utility stocks.

Even if Mr. Hale's judgments concerning future growth were superior to the analysts' forecasts, there still would be no justification for using Mr. Hale's unique growth rate in a DCF formula because investors that price stocks are totally unaware of Mr. Hale's analysis (even if hypothetically it were better). Instead, investors rely upon analysts' forecasts, which are widely available to and used by investors.

**Q. IS A HAMADA ADJUSTMENT JUSTIFIED?**

A. Yes. I explain the reason this adjustment should be used in my direct testimony. Further, financial theory concludes capital structure and firm value are related. Since capital structure and firm value are related, a leverage adjustment, or Hamada 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. My analysis in this area indicates that Staff's ROE should be adjusted upwards by 60-basis points in order to be consistent with financial theory.

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 the leverage adjustment, or Hamada 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 capitals structure. If the capital cost rates do not change to offset changes in the capitals structure then the value of the firm will change. Clearly a leverage adjustment, or Hamada adjustment, is required when a cost of common equity model is based on market

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value and if its results are then applied to book value because the capitals structure is changed from market value capitalization to book value capitalization.

**Q. IS THE USE OF A SIZE PREMIUM APPROPRIATE?**

A. I have analyzed the manner in which a company's size impacts the cost to issue long term debt. The cost to issue long-term debt is inversely related to the size of a debt offering. That is, the smaller the debt offering, the higher the issuance expenses. Since issuance expenses are included as part of the cost of debt, a company's small size increases its cost of debt. A company's size affects both the interest expense (yield or coupon) and the issuance expenses required to issue debt. Additionally, the terms of the issuance are usually more onerous for a smaller issue. This analysis observation confirms the use of size premium.

Further, investors prefer liquidity to lack of liquidity. Accordingly, a share in a business is worth more if it is easily marketable or, conversely, worth less if it is not. Privately held water utilities such as SWON are worth less than publicly traded water utilities. The size premium used in the CAPM accounts for some of these differences.

**Q. IS THE USE OF THE SIZE PREMIUM WIDELY ACCEPTED BY THE ACADEMIC COMITY AND THE FINANCIAL COMMUNITY?**

A. Yes. Since small size is a recognized and meaningful element of risk, it is appropriate to reflect that risk in a company's cost of equity. Credit rating agencies recognize that size affects credit rating. Valuation professionals and courts recognize the use of a size premium.

Mr. Hale Exhibits contain numerous references which support the relationship between size and risk including:

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“We do not view all unregulated businesses equally, since some are riskier than others, but volatility has generally been proportionate to the size of those businesses and the market risk to which they are exposed.”  
[Exhibit\_\_\_\_(ASH-4), page 2 of 7]

“The rating is constrained by ATC's small size, lack of geographic diversification, financial metrics that are weak for the rating but mitigated by the favorable FERC regulatory framework and the funding requirements associated with the company's significant capital expenditure program.”  
[Exhibit\_\_\_\_(ASH-6), page 9 of 24]

“Duke Energy Kentucky Inc’s small size and status as a subsidiary of Baa1 rated Duke Energy Ohio, which was not placed on review for upgrade in November, are also rating constraints.” [Exhibit\_\_\_\_(ASH-6), page 11 of 24]

“Finally, the rating captures MG&E’s comparatively small and concentrated service territory relative to the other utilities in the same rating category.”  
[Exhibit\_\_\_\_(ASH-6), page 11 of 24]

“For Bristol Water plc and Dee Valley Water plc, due to the small size of the company combined with very large investment requirements, Scale and Complexity of Capital Programme & Asset Condition Risk currently take on a greater than standard weight in the actual Baa1 ratings, which compare to A2 grid-indicated ratings.” [Exhibit\_\_\_\_(ASH-12), page 39 of 47]

“Business Risk: Excellent . . . Large customer base” [Exhibit\_\_\_\_(ASH-13), page 2 of 7]

“Risk Dimension . . . Size” [Exhibit\_\_\_\_(ASH-27), page 5 of 5]

**Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

A. Yes.