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State of Florida

Public Service Commission

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TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: May 28, 2020

TO: Office of Commission Clerk (Teitzman)

FROM: Division of Accounting and Finance (Richards, D. Buys, Cicchetti) ALM MC
Office of the General Counsel (Lherisson) JC

RE: Docket No. 20200006-WS – Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.

AGENDA: 06/09/20 – Regular Agenda – Proposed Agency Action – Interested Persons May Participate

COMMISSIONERS ASSIGNED: All Commissioners

PREHEARING OFFICER: Polmann

CRITICAL DATES: None

SPECIAL INSTRUCTIONS: None

Case Background

Section 367.081(4)(f), Florida Statutes (F.S.), authorizes the Commission to establish, not less than once each year, a leverage formula to calculate a reasonable range of returns on equity (ROE) for water and wastewater (WAW) utilities. The current leverage formula methodology was established in Order No. PSC-2001-2514-FOF-WS.[1] On October 23, 2008, the Commission held a formal hearing in Docket No. 20080006-WS to allow interested parties to provide testimony regarding the validity of the leverage formula.[2] Based on the record in that proceeding,

[1]Order No. PSC-2001-2514-FOF-WS, issued December 24, 2001, in Docket No. 20010006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity of water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*

[2]At the May 20, 2008, Commission Conference, upon request of the Office of Public Counsel, the Commission voted to set the establishment of the appropriate leverage formula directly for hearing.

the Commission approved the 2008 leverage formula in Order No. PSC-2008-0846-FOF-WS.[3] In that order, the Commission reaffirmed the methodology that was previously approved in Order No. PSC-2001-2514-FOF-WS.[4]

From 2012 through 2017, the Commission found that the range of returns on equity derived from the annual leverage formulas were not optimal for determining the appropriate authorized ROE for WAW utilities due to Federal Reserve monetary policies that resulted in historically low interest rates. Consequently, the Commission decided it was reasonable to continue using the range of returns on equity of 8.74 percent to 11.16 percent from the 2011 leverage formula approved by Order No. PSC-2011-0287-PAA-WS until 2018.[5]

On November 8, 2017, Commission staff held a workshop to solicit input from interested parties regarding potential changes to the current leverage formula methodology. The only parties that filed pre-workshop comments in the docket were the Office of Public Counsel (OPC) and Utilities, Inc. of Florida (UIF). OPC also filed post-workshop comments on January 31, 2018. On June 26, 2018, the Commission approved the leverage formula by Order No. PSC-2018-0327-PAA-WS.[6] The methodology approved in the 2018 Order was used to establish the 2019 leverage formula.[7]

Section 367.081(4)(f), F.S., authorizes the Commission to establish a range of returns for setting the authorized ROE for WAW utilities. However, use of the leverage formula by the utilities is discretionary and a utility can file cost of equity testimony in lieu of using the leverage formula. The Commission may set an ROE for WAW utilities based on record evidence in any proceeding. If a utility files cost of equity testimony, the Commission will determine the appropriate ROE based on the evidentiary record in that proceeding.

The Commission has jurisdiction pursuant to Section 367.081, F.S.

[3]Order No. PSC-2008-0846-FOF-WS, issued December 31, 2008, in Docket No. 20080006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*
[4]Order No. PSC-2001-2514-FOF-WS, issued December 24, 2001, in Docket No. 20010006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*
[5]Order No. PSC-2011-0287-PAA-WS, issued July 5, 2011, in Docket No. 20110006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*
[6]Order No. PSC-2018-0327-PAA-WS, issued June 26, 2018, in Docket No. 20180006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*
[7]Order No. PSC-2019-0267-PAA-WS, issued July 1, 2019, in Docket No. 20190006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*

Discussion of Issues

Issue 1: What is the appropriate range of returns on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), Florida Statutes?

Recommendation: Staff recommends that the current leverage formula approved by the Commission in Order No. PSC-2019-0267-PAA-WS continue to be used until readdressed in 2021. Accordingly, staff recommends the following leverage formula:

ROE = 6.05% + (1.80 ÷ Equity Ratio)

Where the Equity Ratio = Common Equity ÷ (Common Equity + Preferred Equity + Long-Term and Short-Term Debt)

Range: 7.85 percent at 100 percent equity to 10.55 percent at 40 percent equity

The Commission should cap returns on common equity at 10.55 percent for all WAW utilities with equity ratios less than 40 percent. Imposing a cap serves to discourage imprudent financial risk. This cap is consistent with the methodology in Order No. PSC-2019-0267-PAA-WS. (Richards, D. Buys)

Staff Analysis: Section 367.081(4)(f), F.S., authorizes the Commission to establish a leverage formula to calculate a reasonable range of returns on common equity for WAW utilities. The Commission must establish this leverage formula not less than once a year. For administrative efficiency, the leverage formula is used to determine the appropriate return for an average Florida WAW utility. Staff continues to believe the leverage formula is a sound, workable methodology that reduces the costs and administrative burdens in WAW rate cases by eliminating the need for cost of equity testimony. However, use of the leverage formula by utilities is discretionary and a utility can file cost of equity testimony in lieu of using the leverage formula. As is the case with other regulated companies under the Commission's jurisdiction, the Commission has discretion in the determination of the appropriate ROE based on the evidentiary record in a proceeding. If one or more parties in a rate case or limited proceeding file testimony in lieu of using the leverage formula, the Commission will determine the appropriate ROE based on the evidentiary record in that proceeding.

COVID-19 Impact

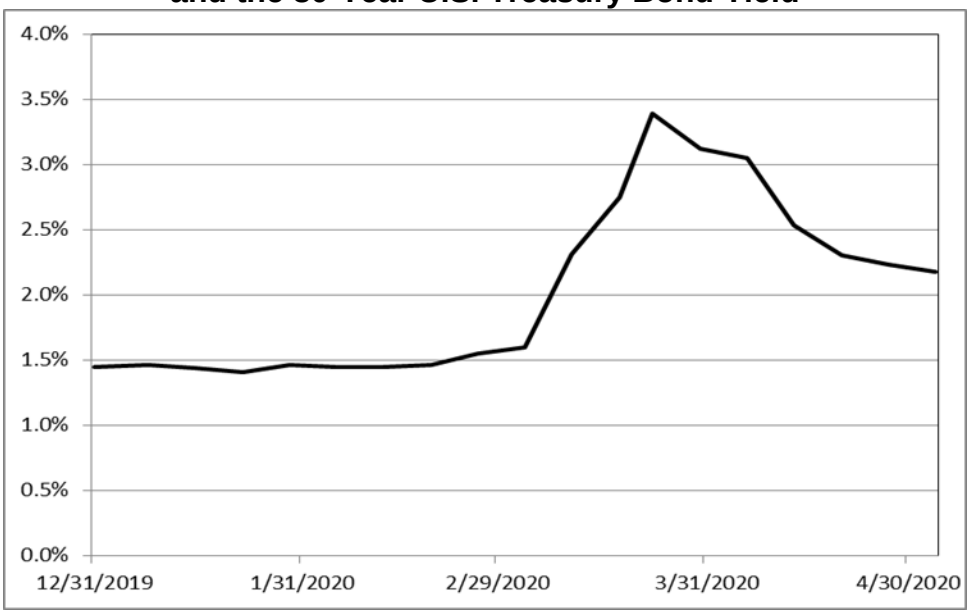
In light of the recessionary impact on the economy caused by the ongoing COVID-19 pandemic, the Federal Open Market Committee (Committee) voted twice in March 2020 to reduce the target range for the federal funds rate. On March 3, 2020, the Committee decided to lower the federal funds target range from 1.50 - 1.75 percent to 1.00 - 1.25 percent.[8] On March 15, 2020, the Committee decided to lower the federal funds target range from 1.00 - 1.25 percent to 0.00 - 0.25 percent, and reasoned, "The effects of the coronavirus will weigh on economic activity in the near term and pose risks to the economic outlook."[9] On April 29, 2020, the Committee

[8]See "Federal Reserve Issues FMOC Statement" on March 03, 2020, available at https://www.federalreserve.gov/newsevents/pressreleases/monetary20200303a.htm.
[9]See "Federal Reserve Issues FMOC Statement" on March 15, 2020, available at https://www.federalreserve.gov/newsevents/pressreleases/monetary20200315a.htm.

decided to maintain the target range for the federal funds rate of 0.00 - 0.25 percent. The Committee expects to maintain this target range until it is confident that the economy has weathered recent events and is on track to achieve its maximum employment and price stability goals.[10]

Further, due to the recent decrease in risk-free interest rates and the uncertainty in the bond market, the volatility of the spread between the Utility 25/30-year BBB Bond Yield and the U.S. 30-year Treasury Bond Yield has been much greater than usual as demonstrated in Figure 1-1. This extreme volatility causes weekly fluctuations in the spread. Staff believes it is not reasonable to set a range of returns on equity for setting rates going forward using data that is influenced by the current catastrophic economic event. Due to this unusual and unique economic situation, staff recommends the current 2019 leverage formula remain in place.

Figure 1-1
Spread between the 25/30-Year BBB Bond Yield and the 30-Year U.S. Treasury Bond Yield



Source: Value Line Selection and Opinion

Updated Leverage Formula

Although staff recommends the 2019 leverage formula remain in place, staff has provided the updated leverage formula using the most recent financial information should the Commission decide not to continue to use the 2019 leverage formula and approve the updated leverage formula. The updated model produced the following leverage formula:

Return on Common Equity = 5.46% + (1.81 ÷ Equity Ratio)

[10]See "Federal Reserve Issues FMOC Statement" on April 29, 2020, available at https://federalreserve.gov/newsevents/pressreleases/monetary20200429a.htm.

Where the Equity Ratio = Common Equity ÷ (Common Equity + Preferred Equity + Long-Term and Short-Term Debt)

Range: 7.27 percent at 100 percent equity to 9.99 percent at 40 percent equity

In conjunction with the updated leverage formula, the returns on common equity should be capped at 9.99 percent for all WAW utilities with equity ratios less than 40 percent to discourage imprudent financial risk. This cap is consistent with the methodology in Order No. PSC-2018-0327-PAA-WS.

Methodology

Staff updated the current leverage formula using the most recent financial data applied to the methodology approved in Order No. PSC-2001-2514-FOF-WS, reaffirmed in Order No. PSC-2008-0846-FOF-WS and modified in Order No. PSC-2018-0327-PAA-WS. The methodology uses ROEs derived from widely accepted financial models applied to an index of natural gas and WAW companies that have actively traded stock and forecasted financial data. To establish the proxy group, staff selected five natural gas companies and seven WAW companies that derive at least 50 percent of their total revenue from regulated operations and have a Standard and Poor's credit rating. These selected companies have market power and are influenced significantly by economic regulation and have a median Standard and Poor's bond rating of "A."

Consistent with the approved methodology, staff used a market capitalization weighted average for: (1) the Discounted Cash Flow (DCF) model results, (2) the Beta values in the Capital Asset Pricing Model (CAPM), and (3) the equity ratio of the proxy group.

Assumed Cost of Debt

Staff used a projected yield on Baa2 rated public utility bonds to estimate the bond yield of an average Florida WAW utility in the calculation of the weighted average cost of capital of the proxy group. A projected yield is used because required returns are forward looking and based on projections.

Consistent with the methodology approved in Order No. PSC-2018-0327-PAA-WS, staff used the projected Baa2 rated utility bond yield for the upcoming four quarters as published in the most recent Blue Chip Financial Forecast (Blue Chip). Staff then added the 120-month historical average spread between the Baa and A Corporate Utility Bond to the projected Baa2 rated utility bond yield to estimate a projected Baa3 rated utility bond yield of 5.46 percent.

The projected assumed Baa3 bond rate of 5.46 percent used in the updated leverage formula calculation includes a 50 basis point adjustment for small-company risk and a 50 basis point adjustment for a private placement premium and remains low relative to historic levels. In comparison, the assumed Baa3 bond rate used in the 2019 leverage formula is 6.05 percent. The lower Baa3 bond rate of 5.46 percent is the primary driver of the overall decrease in the results of the 2020 leverage formula compared to the 2019 leverage formula.

Estimated Cost of Equity

The current leverage formula relies on two ROE models described below. Staff adjusted the results of these models to reflect differences in risk and debt cost between the proxy group and the average Florida WAW utility. The ROE models include a four percent adjustment for flotation costs. The ROE models are as follows:

1) A multistage Discounted Cash Flow (DCF) model applied to an index of natural gas and WAW utilities that have publicly traded stock and are followed by Value Line. This DCF model is an annually compounded model and uses prospective dividend growth rates as published by Value Line.

2) A Capital Asset Pricing Model (CAPM) that relies on a market return for companies followed by Value Line, the average projected yield on the U.S. Treasury's 30-year bonds as of April 1, 2020, published by Blue Chip Financial Forecasts, and the weighted average beta for the index of natural gas and WAW utilities. The market return for the CAPM was calculated using a quarterly DCF model with stock prices as of April 15, 2020.

Consistent with Order No. PSC-2018-0327-PAA-WS, staff averaged the results of the DCF and CAPM models and adjusted the result of 7.62 percent as follows:

1) A bond yield differential of 55 basis points was added to reflect the difference in yields between an A/A2 rated bond, which is the median bond rating for the combined utility index, and a BBB-/Baa3 rated bond. Florida WAW utilities are assumed to be comparable to companies with the lowest investment grade bond rating which is Baa3. This adjustment compensates for the difference between the credit quality of 'A' rated debt and the assumed credit quality of a typical Florida WAW utility.

2) A private placement premium of 50 basis points is added to reflect the difference in yields on publicly traded debt and privately placed debt, which is illiquid. Investors require a premium for the lack of liquidity of privately placed debt.

3) A small-utility risk premium of 50 basis points is added because the average Florida WAW utility is too small to qualify for privately placed debt and smaller companies are considered by investors to be more risky than larger companies.

After the above adjustments, the resulting cost of equity estimate of 9.17 percent is included in the weighted average capital structure of the proxy group to derive the leverage formula. The derivation resulted in an adjustment of 82 basis points to reflect an estimated required return of 9.99 percent at an equity ratio of 40 percent. Table 1-1 shows the components that comprise the upper range of the leverage formula as compared between the 2019 leverage formula and the 2020 leverage formula.

Table 1-1
Adjusted ROE Comparison

Component	2019	2020
DCF Model	7.39%	7.09%
CAPM	8.97%	8.15%
Average	8.18%	7.62%
Bond Yield Differential	0.60%	0.55%
Private Placement Premium	0.50%	0.50%
Small Utility Risk Premium	0.50%	0.50%
Adjusted ROE Average	9.78%	9.17%
Adj. To Reflect Required Equity Return at a 40% Equity Ratio	0.77%	0.82%
Upper Range of ROE	10.55%	9.99%

Source: Staff worksheets

Using the most recent financial data in the leverage formula decreases the lower end of the current allowed ROE range by 58 basis points and decreases the upper end of the range by 56 basis points. Overall, the spread between the range of returns on equity based on the updated leverage formula is 272 basis points (7.27 percent to 9.99 percent). In comparison, the range of returns on equity for the existing leverage formula from 2019 is 270 basis points (7.85 percent to 10.55 percent).

In developing the updated leverage formula, staff acknowledges that the leverage formula depends on four basic assumptions:

1) Business risk is similar for all WAW utilities;

2) The cost of equity is an exponential function of the equity ratio but a linear function of the debt to equity ratio over the relevant range;

3) The marginal weighted average cost of investor capital is constant over the equity ratio range of 40 percent to 100 percent; and

4) The debt cost rate at an assumed Moody's Baa3 bond rating, plus a 50 point private placement premium and a 50 basis point small-utility risk premium, represents the average marginal cost of debt to an average Florida WAW utility over an equity ratio range of 40 percent to 100 percent.

For these reasons, the leverage formula is assumed to be appropriate for the average Florida WAW utility.

Conclusion

In staff's opinion, the current leverage formula range of returns on equity of 7.85 percent to 10.55 percent initially approved in 2019 is still reasonable for WAW utilities. Due to the economic volatility caused by the unique situation of the COVID-19 pandemic, staff believes retaining the use of the current 2019 leverage formula until the leverage formula is addressed again in 2021 is a reasonable alternative to updating the formula using current 2020 financial information. Staff continues to believe the leverage formula is a sound, workable methodology that reduces the costs and administrative burdens in WAW rate cases by eliminating the need for cost of equity testimony. Based on the aforementioned, staff recommends that the current leverage formula approved by the Commission in Order No. PSC-2019-0267-PAA-WS continue to be used until the leverage formula is readdressed in 2021.

Issue 2: Should this docket be closed?

Recommendation: No. Upon expiration of the protest period, if a timely protest is not received from a substantially affected person, the decision should become final and effective upon the issuance of a Consummating Order. However, this docket should remain open to allow staff to monitor changes in capital market conditions and to readdress the reasonableness of the leverage formula as conditions warrant. (Lherisson)

Staff Analysis: Upon expiration of the protest period, if a timely protest is not received from a substantially affected person, the decision should become final and effective upon the issuance of a Consummating Order. However, this docket should remain open to allow staff to monitor changes in capital market conditions and to readdress the reasonableness of the leverage formula as conditions warrant.

SUMMARY OF RESULTS
2020 Water and Wastewater Leverage Formula

	Updated Results	Currently In Effect
(1) DCF ROE for Combined Index	7.09%	7.39%
(2) CAPM ROE for Combined Index	8.15%	8.97%
AVERAGE	7.62%	8.18%
Bond Yield Differential	0.55%	0.60%
Private Placement Premium	0.50%	0.50%
Small-Utility Risk Premium	0.50%	0.50%
Adjustment to Reflect Required Equity Return at a 40% Equity Ratio	0.82%	0.77%
Cost of Equity for Average Florida WAW Utility at 40% Equity Ratio	9.99%	10.55%

2019 Leverage Formula (Currently in Effect)
Return on Common Equity = 6.05% + (1.80 ÷ Equity Ratio)
Range of Returns on Equity = 7.85% to 10.55%

2020 Leverage Formula
Return on Common Equity = 5.46% + (1.81 ÷ Equity Ratio)
Range of Returns on Equity = 7.27% to 9.99%

Marginal Cost of Investor Capital
Average Water and Wastewater Utility

Capital Component	Ratio	Marginal Cost Rate	Weighted Marginal Cost Rate
Common Equity	48.88%	9.17%	4.48%
Total Debt	51.12%	5.46%*	2.79%
	100.00%		7.27%

A 40% equity ratio is the floor for calculating the required return on common equity.
The return on equity at a 40% equity ratio: 5.46% + (1.81 ÷ 0.40) = 9.99%

Marginal Cost of Investor Capital
Average Water and Wastewater Utility at 40% Equity Ratio

Capital Component	Ratio	Marginal Cost Rate	Weighted Marginal Cost Rate
Common Equity	40.00	9.99%	4.00%
Total Debt	60.00	5.46%*	3.27%
	100.00%		7.27%

Where: ER = Equity Ratio = CE ÷ (CE + Pref. Equity + LTD + STD)
*Assumed Baa3 rate for April 2020 plus a 50 basis point private placement premium and a 50 basis point small utility risk premium.

Sources:
Value Line Selection and Opinion
Company 10-K Filings

Discounted Cash Flow Model Results
April 1, 2020 – April 30, 2020

Company	HI-PR	LO-PR	AVG-PR	DCF Results	Weight	Weighted DCF Results
Atmos Energy Corporation	111.34	92.33	101.84	7.10%	20.73%	1.47%
Northwest Natural Gas Company	67.24	54.71	60.98	7.87%	3.24%	0.26%
ONE Gas, Inc.	92.00	75.81	83.91	6.91%	7.19%	0.50%
South Jersey Industries	30.25	22.09	26.17	9.74%	3.95%	0.38%
Spire, Inc.	81.47	67.49	74.48	6.69%	6.35%	0.42%
American States Water	91.11	73.41	82.26	7.00%	4.37%	0.31%
American Water Works	133.72	110.56	122.14	6.77%	32.30%	2.19%
Essential Utilities, Inc. (f/k/a Aqua)	44.95	37.68	41.32	6.67%	13.54%	0.90%
California Water Services Group	54.66	44.14	49.40	7.73%	3.53%	0.27%
Middlesex Water	64.00	53.70	58.85	8.96%	1.55%	0.14%
SJW Group	65.00	51.13	58.07	7.73%	2.40%	0.19%
York Water	45.11	37.92	41.52	7.25%	0.85%	0.06%
				Average Weighted DCF Result:		**7.09%**

The ROE of 7.09 percent represents the expected cost of equity required to match the average stock price with the present value of expected cash flows.

Sources:
Stock prices obtained from Yahoo Finance for the 30-day period April 1, 2020 through April 30, 2020.
Natural Gas company dividends, earnings, and ROE obtained from Value Line Ratings & Reports issued February 20, 2020.
Water and Wastewater company dividends, earnings, and ROE obtained from Value Line Ratings & Reports issued April 10, 2020.

Capital Asset Pricing Model Cost of Equity for
Water and Wastewater Industry

CAPM analysis formula

K = RF + Beta (MR-RF)

K = Investor's required rate of return

RF = Risk-free rate (Blue Chip forecast for Long-Term Treasury bond)

Beta = Measure of industry-specific risk market cap weighted (Average for natural gas and water utilities followed by Value Line)

MR = Market Return (Value Line Investment Analyzer Web Browser)

8.15% = 1.80% + 0.5656 (12.67% - 1.80%) + 0.20%

Note:
Staff calculated the market return using a quarterly DCF model for a large number of dividend paying stocks followed by Value Line. For April 15, 2020, the result was 12.67%. Staff added 20 basis points to the CAPM result to account for a flotation cost of four percent.

Bond Yield for Water and Wastewater Industry

Equity Bond Yield Differential Adjustment

Credit Rating	(A)	Spread	(A-)	Spread	(BBB+)	Spread	(BBB)	Spread	(BBB-)
		0.137		0.137		0.137		0.137	

120-Month Avg. Spread: 0.13741

Total Equity Bond Yield Differential: 0.137 x 4 = 0.548%

Blue Chip Financial Forecasts – Corporate Baa Bond Rate

	2Q 2020	3Q 2020	4Q 2020	1Q 2021
Forecast Corporate Baa Bond	4.4	4.3	4.3	4.3

Average Forecasted Corporate Baa Bond Rate: 4.325

Assumed Bond Yield for Baa3 Utilities: 0.137 + 4.325 = 4.462

	Updated Results	Currently In Effect
Private Placement Premium	0.50%	0.50%
Small-Utility Risk Premium	0.50%	0.50%
Assumed Bond Yield for Baa3 Utilities	4.462%	5.051%
Assumed Bond Yield for Florida WAW Utilities	5.462%	6.051%

Sources:
Value Line Selection and Opinion
Blue Chip Financial Forecast April 2020

2020 Leverage Formula Proxy Group

Company	S&P Bond Rating	Regulated Revenue	V/L Market Capital (Millions)	Equity Ratio	Weighted Equity Ratio	Weighted Value Line Beta
Atmos Energy Corporation	A	94.61%	$14,700	59.01%	12.23%	0.1140
Northwest Natural Gas Co.	A+	97.38%	$2,300	48.21%	1.56%	0.0178
One Gas, Inc.	A	91.54%	$5,100	54.01%	3.88%	0.0432
South Jersey Industries	BBB	55.07%	$2,800	29.60%	1.17%	0.0316
Spire Inc.	A-	95.23%	$4,500	47.02%	2.98%	0.0381
American States Water	A+	75.84%	$3,100	67.75%	2.96%	0.0262
American Water Works	A	85.71%	$22,900	39.30%	12.69%	0.1615
Essential Utilities, Inc.	A	98.08%	$9,600	55.80%	7.56%	0.0812
Cal. Water Serv. Group	A+	97.19%	$2,500	44.22%	1.56%	0.0212
Middlesex Water	A	91.44%	$1,100	55.66%	0.86%	0.0109
SJW Group	A-	100.00%	$1,700	38.48%	0.92%	0.0144
York Water	A-	98.99%	$600	57.05%	0.48%	0.0055
Average	**A**	**90.09%**	**$5,908**	**49.67%**	**48.88%**	**0.5656**

Sources:
Value Line Ratings and Reports
SEC Form 10K for Companies
Standard & Poor's