

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 25, 2022

TO: Office of Commission Clerk (Teitzman)

FROM: Division of Accounting and Finance (Osorio, D. Buys, Mouring) *ALM*
Office of the General Counsel (J. Crawford) *JSC*

RE: Docket No. 20220006-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: 06/07/22 – Regular Agenda – Proposed Agency Action – Interested Persons May Participate

COMMISSIONERS ASSIGNED: All Commissioners

PREHEARING OFFICER: Passidomo

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 original version of 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

¹Order 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.*

²At 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.

in that proceeding, 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 persons regarding potential changes to the current leverage formula methodology. The only stakeholders that filed 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 current leverage formula by Order No. PSC-2018-0327-PAA-WS.⁶ The June 2018 Order approving the current leverage formula provided necessary and timely updates to the leverage formula methodology.

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.

³Order 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.*

⁴Order 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.*

⁵Order 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.*

⁶Order 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.*

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: The leverage formula methodology approved in Order No. PSC-2018-0327-PAA-WS using a proxy group comprised of natural gas and WAW utilities and updated financial data should be used. Accordingly, the following leverage formula should be used until the leverage formula is addressed again in 2023:

$$\text{ROE} = 6.10 + (1.74 \div \text{Equity Ratio})$$

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

Range: 7.84% at 100% equity to 10.45% at 40% equity

The Commission should cap returns on common equity at 10.45 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 approved in Order No. PSC-2018-0327-PAA-WS. (Osorio)

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 on equity for an average Florida WAW utility. 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 of the leverage formula, the Commission will determine the appropriate ROE based on the evidentiary record in that proceeding.

Methodology

In the instant docket, 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 5 natural gas companies and 7 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 an average 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 April 2022 Blue Chip Financial Forecast (Blue Chip). Staff then added the 120-month historical average spread between the Baa and A Corporate Utility Bond yields to the projected Baa2 rated utility bond yield to estimate a projected Baa3 rated utility bond yield of 6.10 percent.

The projected assumed Baa3 bond rate of 6.10 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.

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:

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.

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, 2022, 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 May 17, 2022.

Consistent with Order No. PSC-2018-0327-PAA-WS, staff averaged the results of the DCF and CAPM models and adjusted the result of 8.50 percent as follows:

A bond yield differential of 49 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.

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.

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 9.99 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 46 basis points to reflect an estimated required return of 10.45 percent at an equity ratio of 40 percent. Table 1 shows the components that comprise the upper range of the leverage formula.

Table 1
Adjusted ROE

DCF Model	6.65%
CAPM	10.35%
Average	8.50%
Bond Yield Differential	0.49%
Private Placement Premium	0.50%
Small Utility Risk Premium	0.50%
Adjusted ROE Average	9.99%
Adj. To Reflect Required Equity Return at a 40% Equity Ratio	0.46%
Upper Range of ROE	10.45%

Source: Staff worksheets

Leverage Formula

The updated leverage formula is: $ROE = 6.10 \% + (1.74 \div \text{Equity Ratio})$

The resulting range of returns is 7.84 percent at 100 percent equity to 10.45 percent at 40 percent equity.

Using the most recent financial data in the leverage formula decreases the lower end of the current allowed ROE range by 1 basis point and decreases the upper end of the range by 10 basis points. Overall, the spread between the range of returns on equity based on the updated leverage formula is 261 basis points (7.84 percent to 10.45 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 basis 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.

Based on the aforementioned, staff believes the revised leverage formula methodology applied to a proxy group of natural gas and WAW utilities with updated financial data based on market-capitalization weighted averages produces a reasonable range of ROEs for WAW utilities and reflects current financial markets. As such, staff recommends the following leverage formula be used until a new leverage formula is determined in 2023:

$$\text{ROE} = 6.10\% + (1.74 \div \text{Equity Ratio})$$

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

The appropriate range of returns on equity is 7.84% at 100% equity to 10.45% at 40% equity.

Additionally, staff recommends that the Commission cap returns on common equity at 10.45 percent for all WAW utilities with equity ratios less than 40 percent. Staff recommends a cap to discourage imprudent financial risk. This cap is consistent with the methodology in Order No. PSC-2018-0327-PAA-WS.

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. (J. Crawford)

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
2022 Water and Wastewater Leverage Formula

	Updated <u>Results</u>	Currently <u>In Effect</u>
(1) DCF ROE for Proxy Group	6.65%	7.39%
(2) CAPM ROE for Proxy Group	<u>10.35%</u>	<u>8.97%</u>
AVERAGE	8.50%	8.18%
Bond Yield Differential	0.49%	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	<u>0.46%</u>	<u>0.77%</u>
Cost of Equity for Average Florida WAW Utility at 40% Equity Ratio	<u>10.45%</u>	<u>10.55%</u>

2021 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%

2022 Leverage Formula

Return on Common Equity = 6.10% + (1.74 ÷ Equity Ratio)

Range of Returns on Equity = 7.84% to 10.45%

**Marginal Cost of Investor Capital
Average Water and Wastewater Utility**

<u>Capital Component</u>	<u>Ratio</u>	<u>Marginal Cost Rate</u>	<u>Weighted Marginal Cost Rate</u>
Common Equity	44.62%	9.99%	4.46%
Total Debt	<u>55.38%</u>	6.10%*	<u>3.38%</u>
	<u>100.00%</u>		<u>7.84%</u>

A 40% equity ratio is the floor for calculating the required return on common equity.
 The return on equity at a 40% equity ratio: $6.10\% + (1.74 \div 0.40) = 10.45\%$

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

<u>Capital Component</u>	<u>Ratio</u>	<u>Marginal Cost Rate</u>	<u>Weighted Marginal Cost Rate</u>
Common Equity	40.00	10.45%	4.18%
Total Debt	<u>60.00</u>	6.10%*	<u>3.66%</u>
	<u>100.00%</u>		<u>7.84%</u>

Where: ER = Equity Ratio = $CE \div (CE + \text{Pref. Equity} + \text{LTD} + \text{STD})$

*Assumed Baa3 rate for April 2022 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, 2022 – April 30, 2022

<u>COMPANY</u>	<u>STOCK PRICE</u>			<u>DCF</u>	<u>Weight</u>	<u>DCF</u>
	<u>High</u>	<u>Low</u>	<u>Avg.</u>	<u>Results</u>		<u>Weighted Results</u>
Atmos Energy Corporation	122.96	113.01	117.99	7.29%	16.54%	1.21%
NiSource, Inc.	32.59	29.07	30.83	8.17%	12.86%	1.05%
Northwest Natural Holding	52.29	47.69	49.99	6.98%	1.61%	0.11%
ONE Gas, Inc.	92.26	84.09	88.18	6.37%	4.59%	0.29%
Spire, Inc.	79.24	70.67	74.96	7.28%	3.79%	0.28%
American States Water	92.80	78.35	85.58	6.77%	3.67%	0.25%
American Water Works	173.87	153.73	163.80	5.96%	33.65%	2.00%
Essential Utilities, Inc.	52.62	44.66	48.64	5.63%	14.59%	0.82%
California Water Services	61.75	51.62	56.69	7.49%	3.67%	0.28%
Middlesex Water	109.51	87.70	98.61	7.32%	2.07%	0.15%
SJW Group	71.70	58.50	65.10	7.05%	2.30%	0.16%
York Water	<u>44.39</u>	<u>38.58</u>	<u>41.49</u>	<u>7.21%</u>	<u>0.66%</u>	<u>0.05%</u>
Average Weighted DCF Result:						<u>6.65%</u>

The ROE of 6.65% represents the expected cost of equity required to match the average stock price, less 4% flotation costs, with the present value of expected cash flows.

Sources:

Stock prices obtained from Yahoo Finance for the 30-day period April 1, 2022 through April 30, 2022.

Natural Gas company dividends, earnings, and ROE obtained from Value Line Ratings & Reports issued February 25, 2022.

Water and Wastewater company dividends, earnings, and ROE obtained from Value Line Ratings & Reports issued April 8, 2022.

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

CAPM analysis formula

$$K = RF + \text{Beta} (MR - RF) + 0.20\%$$

K = Investor's required rate of return

RF = Risk-free rate
(April 2022 Blue Chip forecast for 30-year U.S. Treasury Bond Yield)

<u>3Q 2022</u>	<u>4Q 2022</u>	<u>1Q 2023</u>	<u>2Q 2023</u>	<u>3Q 2023</u>
2.80%	3.00%	3.20%	3.30%	3.30%

Average = 3.12%

Beta = Measure of industry-specific risk (market cap weighted average for the proxy group of natural gas and WAW utilities)

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

$$10.35\% = 3.12\% + 0.834 (11.55\% - 3.12\%) + 0.20\%$$

Note:

Staff calculated the market return using a quarterly DCF model for a large number of dividend paying stocks followed by Value Line. As of May 17, 2021, the result was 11.55%. 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

<u>Credit Rating</u>	<u>(A)</u>	<u>Spread</u>	<u>(A-)</u>	<u>Spread</u>	<u>(BBB+)</u>	<u>Spread</u>	<u>(BBB)</u>	<u>Spread</u>	<u>(BBB-)</u>
		0.1228		0.1228		0.1228		0.1228	

120-Month Avg. Spread: 0.1228%

Total Equity Bond
 Yield Differential 0.1228% x 4 = 0.4913%

	<u>2Q 2022</u>	<u>3Q 2022</u>	<u>4Q 2022</u>	<u>1Q 2023</u>
Forecast Corporate Baa Bond	4.60	4.90	5.10	5.30

Average Forecasted Corporate
 Baa Bond Rate 4.9750%

Assumed Bond Yield for Baa3 Utilities: 0.1228% + 4.9750% = 5.0978%

	<u>Updated</u>	<u>Currently</u>
	<u>Results</u>	<u>In Effect</u>
Private Placement Premium	0.50%	0.50%
Small-Utility Risk Premium	0.50%	0.50%
Assumed Bond Yield for Baa3 Utilities	<u>5.10%</u>	<u>5.05%</u>
Assumed Bond Yield for Florida WAW Utilities	<u>6.10%</u>	<u>6.05%</u>

Sources:
 Value Line Selection and Opinion
 Blue Chip Financial Forecast issued April 2022

2022 Leverage Formula Proxy Group

<u>Company</u>	<u>S&P</u> <u>Bond</u> <u>Rating</u>	<u>Regulated</u> <u>Revenue</u>	<u>V/L Market</u> <u>Capital</u> <u>(Millions)</u>	<u>Equity</u> <u>Ratio</u>	<u>Equity</u> <u>Ratio</u> <u>(Weighted)</u>	<u>Value</u> <u>Line</u> <u>Beta</u>	<u>Value Line</u> <u>Beta</u> <u>(Weighted)</u>
Atmos Energy Corporation	A-	95.14%	\$14,400	51.89%	8.58%	0.80	0.132
NiSource, Inc.	BBB+	96.57%	\$11,200	42.60%	5.48%	0.85	0.109
Northwest Natural Holding	A+	96.25%	\$1,400	39.46%	0.63%	0.80	0.013
One Gas, Inc.	BBB+	98.85%	\$4,000	35.93%	1.65%	0.80	0.037
Spire Inc.	A-	94.80%	\$3,300	42.03%	1.59%	0.85	0.032
American States Water	A+	69.58%	\$3,200	60.73%	2.23%	0.65	0.024
American Water Works	A	85.67%	\$29,300	39.92%	13.43%	0.85	0.286
Essential Utilities, Inc.	A	97.26%	\$12,700	46.45%	6.77%	0.95	0.139
Cal. Water Serv. Group	A+	96.81%	\$3,200	51.91%	1.91%	0.65	0.024
Middlesex Water	A	91.89%	\$1,800	53.13%	1.10%	0.70	0.014
SJW Group	A-	97.54%	\$2,000	39.34%	0.90%	0.80	0.018
York Water	<u>A-</u>	<u>99.00%</u>	<u>\$575</u>	<u>51.05%</u>	<u>0.34%</u>	<u>0.85</u>	<u>0.006</u>
Average	A	93.28%	\$7,256.25	46.20%	44.62%	0.800	0.834