

State of Florida



## Public Service Commission

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TALLAHASSEE, FLORIDA 32399-0850

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

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**DATE:** May 30, 2019

**TO:** Office of Commission Clerk (Teitzman)

**FROM:** Division of Accounting and Finance (D. Buys, Cicchetti, Hightower) DRB CICCHETTI HIGHTOWER  
Office of the General Counsel (Trierweiler) ALM

**RE:** Docket No. 20190006-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:** 06/11/19 – Regular Agenda – Proposed Agency Action – Interested Persons May Participate

**COMMISSIONERS ASSIGNED:** All Commissioners

**PREHEARING OFFICER:** Clark

**CRITICAL DATES:** None

**SPECIAL INSTRUCTIONS:** None

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### 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.<sup>1</sup> 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.<sup>2</sup> Based on the record

<sup>1</sup>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.*

<sup>2</sup>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.

in that proceeding, the Commission approved the 2008 leverage formula in Order No. PSC-2008-0846-FOF-WS.<sup>3</sup> In that order, the Commission reaffirmed the methodology that was previously approved in Order No. PSC-2001-2514-FOF-WS.<sup>4</sup>

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.<sup>5</sup>

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.<sup>6</sup> 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.

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<sup>3</sup>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.*

<sup>4</sup>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.*

<sup>5</sup>Order No. PSC-11-0287-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.*

<sup>6</sup>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.*

## 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 2020:

$$\text{ROE} = 6.05 + (1.80 \div \text{Equity Ratio})$$

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

Range: 7.85% at 100% equity to 10.55% at 40% 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-2018-0327-PAA-WS. (Hightower)

**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. 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 water and wastewater companies that have actively traded stock and forecasted financial data. To establish the proxy group, staff selected 4 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 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 6.05 percent.

The projected assumed Baa3 bond rate of 6.05 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 2018 leverage formula is 6.24 percent. The lower Baa3 bond rate of 6.05 percent is the primary driver of the overall decrease in the results of the 2019 leverage formula compared to the 2018 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:

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 May 1, 2019, 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, 2019.

Consistent with Order No. PSC-2018-0327-PAA-WS, staff averaged the results of the DCF and CAPM models and adjusted the result of 8.18 percent as follows:

A bond yield differential of 60 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 9.78 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 77 basis points to reflect an estimated required return of 10.55 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	7.39%
CAPM	8.97%
Average	8.18%
Bond Yield Differential	0.60%
Private Placement Premium	0.50%
Small Utility Risk Premium	0.50%
Adjusted ROE Average	9.78%
Adj. To Reflect Required Equity Return at a 40% Equity Ratio	0.77%
Upper Range of ROE	10.55%

Source: Staff worksheets

### **Leverage Formula**

The updated leverage formula is:  $ROE = 6.05 \% + (1.80 \div \text{Equity Ratio})$

The resulting range of returns is 7.85 percent at 100 percent equity to 10.55 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 26 basis points and decreases the upper end of the range by 37 basis points. Overall, the spread between the range of returns on equity based on the updated leverage formula is 270 basis points (7.85 percent to 10.55 percent). In comparison, the range of returns on equity for the existing leverage formula from 2018 is 281 basis points (8.11 percent to 10.92 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 2020:

$$\text{ROE} = 6.05\% + (1.80 \div \text{Equity Ratio})$$

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 7.85% at 100% equity to 10.55% at 40% equity.

Additionally, staff recommends that the Commission cap returns on common equity at 10.55 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. (Trierweiler)

**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**  
**2019 Water and Wastewater Leverage Formula**

	<u>Updated</u> <u>Results</u>	<u>Currently</u> <u>In Effect</u>
(A) DCF ROE for Combined Index	7.39%	7.69%
(B) CAPM ROE for Combined Index	<u>8.97%</u>	<u>9.49%</u>
AVERAGE	8.18%	8.59%
Bond Yield Differential	0.60%	0.64%
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>0.77%</u>	<u>0.85%</u>
Cost of Equity for Average Florida WAW Utility at 40% Equity Ratio	<u>10.55%</u>	<u>11.08%</u>

2018 Leverage Formula (Currently in Effect)

Return on Common Equity = 6.24% + (1.61 ÷ Equity Ratio)

Range of Returns on Equity = 8.18% to 11.08%

2019 Leverage Formula

Return on Common Equity = 6.05% + (1.80 ÷ Equity Ratio)

Range of Returns on Equity = 7.85% to 10.55%



**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	48.22%	9.78%	4.72%
Total Debt	<u>51.78%</u>	6.05%*	<u>3.13%</u>
	100.00%		7.85%

A 40% equity ratio is the floor for calculating the required return on common equity. The return on equity at a 40% equity ratio:  $6.05\% + (1.80 \div 0.40) = 10.55\%$

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%	10.55%	4.22%
Total Debt	<u>60.00%</u>	6.05%*	<u>3.63%</u>
	100.00%		7.85%

Where: ER = Equity Ratio = CE / (CE + Pref. Equity + LTD+ STD)

\*Assumed Baa3 rate for April 2019 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, 2019 - April 30, 2019**

COMPANY	HI-PR	LO-PR	AVG-PR <sup>[1]</sup>	DCF Results	WEIGHT <sup>[3]</sup>	Weighted DCF RESULTS <sup>[4]</sup>
Atmos Energy Corporation	102.97	98.66	96.78	7.49%	20.76%	1.56%
Northwest Natural Gas Company	67.56	63.48	62.90	7.44%	3.46%	0.26%
ONE Gas, Inc	88.97	85.45	83.72	7.11%	8.01%	0.57%
Spire Inc.	84.54	80.53	79.23	7.74%	7.10%	0.55%
American States Water	71.50	67.52	66.73	7.43%	4.73%	0.35%
American Water Works	108.23	101.92	100.87	7.05%	34.05%	2.40%
Aqua America	39.08	34.79	35.46	7.79%	11.83%	0.92%
California Water Service Group	54.56	48.00	49.23	7.43%	4.55%	0.34%
Middlesex Water	58.14	52.51	53.11	8.72%	1.64%	0.14%
SJW Group	62.65	59.10	58.44	7.49%	3.10%	0.23%
York Water	34.55	32.29	32.08	8.54%	0.77%	0.07%
<b>Average Weighted DCF Result:</b>						<b><u>7.39%</u></b>

The ROE of 7.39 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, 2019 through April 30, 2019

Natural Gas (NG) company dividends, earnings, and ROE obtained from Value Line Ratings & Reports issued March 1, 2019

Water and Wastewater (WAW) company dividends, earnings and ROE obtained from Value Line Ratings & Reports issued April 12, 2019

Notes:

<sup>[1]</sup> Average Stock Prices include four percent flotation cost

<sup>[3]</sup> Company's weight based off of Market Cap

<sup>[4]</sup> Company's DCF results are weighted against their Market Cap Weight

**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)

$$8.97 \% = 3.10 \% + 0.64 ( 12.02 \% - 3.10 \% ) + 0.20\%$$

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 April 15, 2019, the result was 12.02%. 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**

Credit Rating	<u>Equity Bond Yield Differential</u>					
	(A)	Spread	(A-)	Spread (BBB+)	Spread (BBB)	Spread (BBB-)
		0.15		0.15	0.15	0.15
<b>120 - Month Average Spread</b>		<b>0.150654</b>				
<b>Total Equity Bond Yield Differential</b>				<b>0.151 x 4 = 0.604%</b>		

**Blue Chip Financial Forecasts - Corporate Baa Bond Rate**

	2Q 2019	3Q 2019	4Q 2019	1Q 2020
Forecast Corporate Baa Bond	4.80	4.90	4.90	5.00
<b>Average Forecasted Corporate Baa Bond Rate:</b>	<b>4.90</b>			

**Assumed Bond Yield for Baa3 Utilities: 4.90 + 0.151 = 5.051**

	<b>Updated</b>	<b>Currently</b>
	<b><u>Results</u></b>	<b><u>In Effect</u></b>
Private Placement Premium	0.50%	0.50%
Small-Utility Risk Premium	0.50%	0.50%
Assumed Bond Yield for Baa3 Utilities	<u>5.05%</u>	<u>5.24%</u>
<b>Assumed Bond Yield for Florida WAW Utilities</b>	<b><u>6.05%</u></b>	<b><u>6.24%</u></b>

Sources:

Value Line Selection and Opinion

Blue Chip Financial Forecast May 2019

**2019 Leverage Formula Proxy Group**

<u>Company</u>	<u>S &amp; P Bond Rating</u>	<u>Regulated Revenue</u>	<u>V/L Market Capital (Millions)</u>	<u>Equity Ratio</u>	<u>Weighted Equity Ratio</u>	<u>Weighted Value Line Beta</u>
Atmos Energy Corporation	A	96.39%	\$ 11,400	56.69%	11.77%	0.12
Northwest Natural Gas Company	A-	96.39%	\$ 1,900	44.43%	1.54%	0.02
ONE Gas, Inc	A	100.00%	\$ 4,400	50.58%	4.05%	0.05
Spire Inc.	BBB+	96.10%	\$ 3,900	47.59%	3.38%	0.05
American States Water	BBB-	75.46%	\$ 2,600	63.46%	3.00%	0.03
American Water Works	A	86.74%	\$ 8,700	40.51%	13.79%	0.20
Aqua America	A	99.59%	\$ 6,500	45.22%	5.35%	0.08
California Water Service Group	A+	94.09%	\$ 2,500	45.35%	2.06%	0.03
Middlesex Water	A	88.28%	\$ 900	54.38%	0.89%	0.01
SJW Group	A	96.72%	\$ 1,700	62.60%	1.94%	0.02
York Water	A-	100.00%	\$ 425	57.22%	0.44%	0.01
<b>Average</b>	<b>A</b>	<b>93.61%</b>	<b>\$ 4,993.18</b>	<b>51.64%</b>	<b>48.22%</b>	<b>0.64</b>

Sources:

Value Line Ratings and Reports  
 S.E.C. Form 10K for  
 Companies  
 Standard & Poor's