

Exhibit No.:
Issue: *Rate of Return*
Witness: *Matthew J. Barnes*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Rebuttal Testimony*
Case No.: *SR-2016-0202*
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MISSOURI PUBLIC SERVICE COMMISSION

COMMISSION STAFF DIVISION

WATER & SEWER DEPARTMENT

REBUTTAL TESTIMONY

OF

MATTHEW J. BARNES

RACCOON CREEK UTILITY OPERATING COMPANY

CASE NO. SR-2016-0202

Jefferson City, Missouri
October 2016

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OF

MATTHEW J. BARNES

RACCOON CREEK UTILITY OPERATING COMPANY

CASE NO. SR-2016-0202

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OF

MATTHEW J. BARNES

RACCOON CREEK UTILITY OPERATING COMPANY

CASE NO. ER-2016-0156

Q. Please state your name and business address?

A. My name is Matthew J. Barnes and my business address is Missouri Public Service Commission, P.O. Box 360, Jefferson City, MO 65102.

Q. What is your position at the Missouri Public Service Commission (“Commission”)?

A. I am a Utility Regulatory Auditor IV in the Commission Staff Division, Water and Sewer Department.

Q. What is you educational background?

A. See Schedule MJB-r1.

Q. Have you made recommendations in any other cases before this Commission?

A. Yes. See Schedule MJB-r1.

Q. Have you made recommendations in any other cases before this Commission that are not included in Schedule MJB-r1?

A. Yes. I have developed rate of return recommendations for numerous small water and sewer rate cases and finance cases.

EXECUTIVE SUMMARY

Q. What is the purpose of your rebuttal testimony?

1 A. The purpose of my rebuttal testimony is to provide Staff's capital structure,
2 cost of debt, return on equity (ROE) and rate of return (ROR) recommendation for
3 Raccoon Creek Utility Operating Company, Inc. ("Raccoon Creek") to the Commission. I
4 will also respond to Company witness Dylan W. D'Ascendis' testimony, specifically his
5 assumptions used in calculations of Raccoon Creek's weighted average cost of capital
6 (WACC) and his claims that Staff's ROE methodology is unreasonable.

7 Q. What is Staff's recommended capital structure for Raccoon Creek?

8 A. A hypothetical capital structure consisting of 25% equity and 75% total debt.¹

9 Q. What is Staff's position for the cost of debt?

10 A. In this case, Staff does not oppose the Company's proposed cost of debt.
11 However, Staff's initial cost of debt calculation for Raccoon Creek was 8.15%. For
12 discussion of Staff's policy decision, please direct questions to Commission Staff Director
13 Natelle Dietrich.

14 Q. What is Staff's recommended ROE and ROR?

15 A. Staff recommends an ROE of 12.15% and an overall ROR of 13.54%. This is
16 consistent with Staff's Small Utility Return on Equity (ROE)/Rate of Return (ROR)
17 Methodology attached as Schedule MJB-r2.

18 **RETURN ON EQUITY**

19 Q. Company witness D'Ascendis recommends the Commission authorize an ROE
20 of 15.75% for Raccoon Creek. Do you agree?

¹ See Capital Structure Determination discussion on pages 4 and 5 of Staff's Small Utility Return on Equity (ROE)/Rate of Return (ROR) Methodology (Schedule MJB-r2)

1 A. No I do not. While I do not disagree with his methodology, I do disagree with
2 the cost of long-term debt rate he assumed to calculate Missouri American Water Company's²
3 (MAWC) WACC and Staff's WACC, Approach 1 and Approach 2, respectively.

4 Q. What cost of long term debt should Company witness D'Ascendis have used
5 for MAWC in Approach 1?

6 A. While I do not know what MAWC's current cost of long-term debt is, Staff
7 recommended a cost of long term debt of 5.69% in MAWC's last rate case.³

8 Q. What does Company witness. D'Ascendis' use of the same cost of long-term
9 debt of 14.00% for MAWC and Raccoon Creek in Approach 1 imply?

10 A. Using the same cost of long-term debt of 14.00% for MAWC and
11 Raccoon Creek in Approach 1 implies that both companies have equal financial risk, which
12 they do not.

13 Q. Did Company witness D'Ascendis apply the same cost of long-term debt of
14 14.00% using Staff's capital structure in Approach 2?

15 A. Yes he did.

16 Q. Do you agree that Staff recommended a cost of long-term debt of 14.00%?

17 A. No I do not. Staff used a cost of long-term debt of 8.15% consistent with
18 Staff's Small Utility Return on Equity (ROE)/Rate of Return (ROR) Methodology attached as
19 Schedule MJB-r2. Although Staff used a cost of long-term debt of 8.15% for purposes of its
20 Small Utility Return on Equity (ROE)/Rate of Return (ROR) Methodology, Staff does not
21 oppose Raccoon Creek's recommended cost of long-term debt, which is 14.00%.

² Please see Mr. D'Ascendis' Schedule DWD-01, Sub-Schedule DWD-2 and Schedule DWD-01, Sub-Schedule DWD-3

³ File No. WR-2015-0301.

Rebuttal Testimony of
Matthew J. Barnes

1 Q. How did Staff estimate Raccoon Creek's ROE?

2 A. Consistent with Staff's Small Utility Return on Equity (ROE)/Rate of Return
3 (ROR) Methodology for estimating Raccoon Creek's ROE, explained in detail in
4 Schedule MJB-r2, Staff added a 4% risk premium to a 3-month (May, June, and July 2016)
5 average of an imputed 'B' rated yield for long-term public utility bonds.

6 Q. What is Staff's ROE recommendation for Raccoon Creek?

7 A. Adding a 4% risk premium to the 3-month (May, June, and July 2016) average
8 of an imputed 'B' rated yield for long-term public utility bonds of 8.15%, Staff estimated an
9 ROE of 12.15% for Raccoon Creek.

10 Q. Does this conclude your rebuttal testimony?

11 A. Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

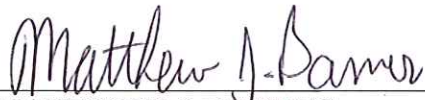
In the Matter of the Application of a Rate)
Increase for Raccoon Creek Utility Operating)
Company Inc.) Case No. SR-2016-0202

AFFIDAVIT OF MATTHEW J. BARNES

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

COMES NOW MATTHEW J. BARNES and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing Rebuttal Testimony and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

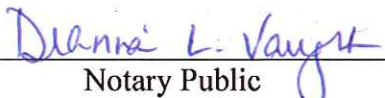


MATTHEW J. BARNES

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 13th day of October, 2016.

DIANNA L. VAUGHT Notary Public - Notary Seal State of Missouri Commissioned for Cole County My Commission Expires: June 28, 2019 Commission Number: 15207377



Notary Public

MATTHEW J. BARNES

EDUCATION AND RATE CASE PARTICIPATION

Educational and Employment Background and Credentials

I am a Utility Regulatory Auditor IV in the Water and Sewer Department, Commission Staff Division for the Missouri Public Service Commission. I was promoted to Utility Regulatory Auditor IV in the Energy Resources Department, Commission Staff Division for the Missouri Public Service Commission in June 2008. I accepted the position of Utility Regulatory Auditor I/II/III in June 2003. I transferred to the position of Utility Regulatory Auditor IV in the Water and Sewer Department in June 2016.

In December 2002, I earned a Bachelor of Science Degree in Business Administration with an Emphasis in Accounting from Columbia College. In May 2005, I earned a Master's in Business Administration with an Emphasis in Accounting from William Woods University.

RATE CASE PARTICIPATION

Date Filed	Issue	Case Number	Exhibit	Case Name
09/08/2004	Merger with TXU Gas	GM20040607	Staff Recommendation	Atmos Energy Corporation
10/15/2004	Rate of Return	TC20021076	Supplemental Direct	BPS Telephone Company
06/28/2005	Finance Recommendation	EF20050387	Staff Recommendation	Kansas City Power and Light Company
06/28/2005	Finance Recommendation	EF20050388	Staff Recommendation	Kansas City Power and Light Company
08/31/2005	Finance Recommendation	EF20050498	Staff Recommendation	Kansas City Power and Light Company
11/15/2005	Spin-off of landline operations	IO20060086	Rebuttal	Sprint Nextel Corporation

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EDUCATION AND RATE CASE PARTICIPATION

03/08/2006	Spin-off of landline operations	TM20060272	Rebuttal	Alltel Missouri, Inc.
08/08/2006	Rate of Return	ER20060314	Direct	Kansas City Power & Light Company
09/08/2006	Rate of Return	ER20060314	Rebuttal	Kansas City Power & Light Company
09/13/2006	Rate of Return	GR20060387	Direct	Atmos Energy Corporation
10/06/2006	Rate of Return	ER20060314	Surrebuttal	Kansas City Power & Light Company
11/07/2006	Rate of Return	ER20060314	True-Up Direct	Kansas City Power & Light Company
11/13/2006	Rate of Return	GR20060387	Rebuttal	Atmos Energy Corporation
11/23/2006	Rate of Return	GR20060387	Surrebuttal	Atmos Energy Corporation
12/01/2006	Rate of Return	WR20060425	Direct	Algonquin Water Resources of Missouri LLC
12/28/2006	Rate of Return	WR20060425	Rebuttal	Algonquin Water Resources of Missouri LLC
01/12/2007	Rate of Return	WR20060425	Surrebuttal	Algonquin Water Resources of Missouri LLC
02/07/2007	Finance Recommendation	GF20070220	Staff Recommendation	Laclede Gas Company

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EDUCATION AND RATE CASE PARTICIPATION

05/04/2007	Rate of Return	GR20070208	Direct	Laclede Gas Company
07/24/2007	Rate of Return	ER20070291	Direct	Kansas City Power and Light Company
08/30/2007	Rate of Return	ER20070291	Rebuttal	Kansas City Power and Light Company
09/20/2007	Rate of Return	ER20070291	Surrebuttal	Kansas City Power and Light Company
11/02/2007	Rate of Return	ER20070291	True-up Direct	Kansas City Power and Light Company
02/01/2008	Finance Recommendation	EF20080214	Staff Recommendation	Kansas City Power and Light Company
02/22/2008	Rate of Return	ER20080093	Cost of Service Report	The Empire District Electric Company
04/04/2008	Rate of Return	ER20080093	Rebuttal Testimony	The Empire District Electric Company
04/25/2008	Rate of Return	ER20080093	Surrebuttal Testimony	The Empire District Electric Company
08/18/2008	Rate of Return	WR20080311	Cost of Service Report	Missouri-American Water Company
09/30/2008	Rate of Return	WR20080311	Rebuttal Testimony	Missouri-American Water Company
10/16/2008	Rate of Return	WR2008031	Surrebuttal Testimony	Missouri-American Water Company

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EDUCATION AND RATE CASE PARTICIPATION

02/26/2010	Fuel Adjustment Clause	ER20100130	Cost of Service Report	The Empire District Electric Company
04/02/2010	Fuel Adjustment Clause	ER20100130	Rebuttal Testimony	The Empire District Electric Company
04/23/2010	Fuel Adjustment Clause	ER20100130	Surrebuttal Testimony	The Empire District Electric Company
02/23/11	Fuel Adjustment Clause	ER20110004	Cost of Service Report	The Empire District Electric Company
04/22/11	Fuel Adjustment Clause	ER20110004	Rebuttal Testimony	The Empire District Electric Company
04/28/11	Fuel Adjustment Clause	ER20110004	Surrebuttal Testimony	The Empire District Electric Company
05/06/11	Fuel Adjustment Clause	ER20110004	True-up Direct Testimony	The Empire District Electric Company
10/21/11	Costs for the Phase-In Tariffs	ER20120024	Direct Testimony	KCP&L Greater Missouri Operations Company
11/17/11	Rate of Return	WR20110337	Cost of Service Report	Missouri-American Water Company
08/09/12	Fuel Adjustment Clause	ER20120175	Staff Report	KCP&L Greater Missouri Operations Company
09/12/12	Fuel Adjustment Clause	ER20120175	Rebuttal Testimony	KCP&L Greater Missouri Operations Company
10/10/12	Fuel Adjustment Clause	ER20120175	Surrebuttal Testimony	KCP&L Greater Missouri Operations Company

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EDUCATION AND RATE CASE PARTICIPATION

11/30/12	Fuel Adjustment Clause	ER20120345	Cost of Service Report	The Empire District Electric Company
12/13/14	Fuel Adjustment Clause	ER20120345	Class Cost of Service Report	The Empire District Electric Company
01/16/13	Fuel Adjustment Clause	ER20120345	Rebuttal Testimony	The Empire District Electric Company
02/14/13	Fuel Adjustment Clause	ER20120345	Surrebuttal Testimony	The Empire District Electric Company
12/05/14	Fuel Adjustment Clause	ER20140258	Cost of Service Report	Ameren Missouri
12/19/14	Fuel Adjustment Clause	ER20140258	Class Cost of Service Report	Ameren Missouri
01/16/15	Fuel Adjustment Clause	ER20140258	Rebuttal Testimony	Ameren Missouri
02/06/15	Fuel Adjustment Clause	ER20140258	Surrebuttal Testimony	Ameren Missouri
03/17/15	Fuel Adjustment Clause	ER20140258	True-up Direct Testimony	Ameren Missouri
07/15/16	Fuel Adjustment Clause	ER20160156	Staff Report Revenue Requirement Cost of Service	KCP&L Greater Missouri Operations Company
07/29/16	Fuel Adjustment Clause	ER20160156	Staff Report Rate Design	KCP&L Greater Missouri Operations Company
10/13/16	Rate of Return	SR20160202	Rebuttal Testimony	Raccoon Creek Utility Operating Company

Small Utility

Return on Equity (ROE)/Rate of Return (ROR)

Methodology

Prepared by

**Financial Analysis Department
(Shana Griffin, Zephania Marevangeo and David Murray)
Utility Services Division
Missouri Public Service Commission
September 2010
(updated January 2016)**

Financial Analysis Small Water and Sewer Return on Equity (ROE) Determination

Financial Analysis' (FA) small water and sewer (W&S) procedure is based on the basic risk and return principle that investors should require a return on equity (ROE) that is higher than a current market-implied yield on a debt investment in the same company (the current required return on debt is not the same as an embedded cost of a debt to a company in which the required return on those debt instruments was based on the risk and return environment at that time). Because FA's methodology uses current cost of debt information to estimate a current required ROE, this allows estimates for small water and sewer companies to be responsive, current and specific. FA's procedure is based on a generic risk premium estimate observed in US capital markets.¹ Staff applies this "standard" risk premium to a reasonable estimate of the current cost of debt for the subject company to arrive at an estimated cost of equity. Because small water and sewer companies typically don't issue debt that is actively traded, FA must rely on its estimate of the subject company's credit rating and then determine a recent average cost of utility debt for this rating based on public utility bond yield data published in the Mergent Bond Record.² The Department then adds the "standard" risk premium to this current cost of debt to estimate the cost of common equity. These capital costs are then applied to the appropriate weights in the recommended capital structure to estimate a fair and reasonable rate of return.

Recommended Formula:

Recommended Return on Common Equity = Moody's Public Utility Bond Yield average of the past three months from Mergent³ + 3-4% risk premium.

This formula is based on the bond yield risk premium method for estimating the cost of equity. According to the textbook *Analysis of Equity Investments: Valuation* (2002) by John D. Stowe, Thomas R. Robinson, Jerald E. Pinto and Dennis W. McLeavey (used as part of the curriculum in the Chartered Financial Analyst Program), a typical risk premium added to the yield-to-maturity (YTM) of a company's long-term debt is in the 3 to 4 percent range. For purposes of estimating the cost of common equity for Missouri's larger electric, gas and water utilities, FA believes at least the low end of this risk premium range is appropriate considering publicly-traded utility stocks exhibit investment characteristics very similar to bonds. Consequently, the low end of the risk

¹ John D. Stowe, Thomas R. Robinson, Jerald E. Pinto and Dennis W. McLeavey, *Analysis of Equity Investments: Valuation*, 2002, p. 54.

² Staff had been using Bondsonline, but as of August 2015, BondsOnline reduced the amount and specificity of utility bond yield data it reports. Staff had used Moody's public utility bond yields before subscribing to BondOnline. Because Moody's public utility bond yields are widely published and relied upon by others in the utility industry, Staff is now using these yields for purposes of evaluating changes in utility capital costs. This change is the primary reason Staff was required to update the explanation of its methodology in January 2016. Staff will discuss the changes in greater detail later in this study.

³ If Staff estimates a company's credit rating as 'BB' or 'B' then Staff uses Bank of America Merrill Lynch corporate bond yield spread information to impute the corresponding implied utility bond yield by adding/subtracting these spreads to Moody's utility bond yield data.

premium estimate will be considered for companies that are not privately held or are subsidiaries of publicly-traded parent companies. However, the high end of the risk premium estimate may be used for privately owned small water and sewer companies that are not considered to be marketable from an acquisition standpoint.

Estimated Bond Rating:

In order to estimate the cost of debt for the subject company (assuming there is no current reasonable yield on the subject company's cost of debt), FA must estimate the credit rating of the subject company. FA's estimate of the subject company's credit rating will be restricted to credit ratings within the range of 'AAA' to 'B'. Because most regulated small water and sewer companies in Missouri do not issue debt either directly or indirectly (through a parent company), they do not have a published credit rating. Therefore, in such cases FA will use Standard & Poor's (S&P) corporate rating methodology as a guide to estimate the small water and sewer utility's credit rating. This guide allows FA to estimate a credit rating based on an assessment of the business and financial risks of the small water and sewer utility.

On November 19, 2013, S&P published its revised Corporate Ratings Methodology, which superseded its previous utility ratings' methodology, published on May 27, 2009. Because the May 27, 2009 report provided guidance on typical capital structures for the various rating categories and since capital structure is a key input in developing a rate of return recommendation, Staff will continue to use S&P's corporate rating methodology that was published on May 27, 2009 as a supplemental guide.⁴ In the 2009 methodology, the "debt/ capital" ratio was a core financial ratio used to determine a subject company's Financial Risk Profile (FRP). S&P's updated (November 19, 2013) FRP assignment approach relies primarily on cash flow leverage ratios rather than the "debt/ capital" ratio as a core FRP determinant.

In light of the inherent subjectivity in estimating a credit rating, coupled, with insufficient financial data and/or unaudited/unreliable financial statements typically received from small water and sewer companies during discovery, FA believes relying on the simple and straight-forward "debt/ capital" ratio for purposes of assessing an appropriate "FRP" is the most objective, and consequently, fair and reasonable approach. However, if there is compelling conflicting financial information that would imply a different FRP than the benchmark using only the debt/capital ratio, FA will consider this information.

Based on S&P data available for the water companies it rates, these companies have a FRP no lower than "Aggressive" and business risk profiles ("BRP") of "Excellent."⁵ Although S&P assigns an "Excellent" BRP to all of the water and sewer companies it rates, Staff believes that due to the fact that some small water and sewer companies have trouble receiving debt financing, this should be considered in assigning BRPs for purposes of estimating the cost of equity for small water and sewer companies. Staff will determine the BRP of a company by assessing the company's access or potential access to debt capital. If a company proves to Staff that they cannot obtain a

⁴ Staff's first edition of this "Small Utility ROE/ROR Methodology" was based on S&P's corporate rating methodology that was published on May 27, 2009.

⁵ "Excellent" is considered to be the least risky of all of S&P's business risk profiles.

loan or the company can obtain a loan but has to pledge personal assets in order to do so, then Staff would classify the company's BRP as "Satisfactory." If the company can obtain a commercial loan without having to pledge personal assets, then Staff would classify the company as having a "Strong" BRP. If a company or its parent can issue debt directly to capital providers, then Staff would classify the company as having an "Excellent" BRP. The FRP of a company will be estimated by determining the company's "debt/capital" ratio and comparing it to the following S&P's benchmark ratios:

Financial Risk Indicative Ratios (Corporates)
Debt/Capital
(%)

Minimal	less than 25
Modest	25-35
Intermediate	35-45
Significant	45-50
Aggressive	50-60
Highly Leveraged	greater than 60

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Based on S&P's credit rating methodology, a subject company's BRP and FRP are combined to determine a credit rating which can range from "AAA" to "B-". Unfortunately, starting August 2015 BondsOnline (the source FA had used for utility bond yield information) ceased the comprehensive publication of debt yields for securities with a rating of greater than "A" and less than "BBB". As a result, Staff is now using Moody's public utility bond yields for purposes of evaluating changes in utility capital costs.

Moody's coverage also has a data limitation problem as it does not publish bond yields for securities with a rating of greater than "AA" and less than "BBB." Therefore, in cases in which Staff estimates a credit rating lower than a "BBB" rating, Staff will use the appropriate Bank of America Merrill Lynch corporate bond spread data which is readily available on the Federal Reserve Bank of St. Louis' website⁷ to extrapolate the utility bond yield for those respective categories. For example, if Staff estimated a subject company to have a 'B' rating, Staff would take the most recent 3 month average spread between 'BBB' corporate bond yields and 'B' corporate bond yields and add it to the 'BBB' Moody's public utility bond yield published in the Mergent Bond Record to impute the 'B' utility bond yield.

See the attached matrix that shows the indicated bond rating Staff will use based on the intersection of the BRP and the FRP.

⁶ S&P RatingsDirect, May 27, 2009, "Criteria Methodology: Business Risk/Financial Risk Matrix Expanded" (Attachment A).

⁷ <https://research.stlouisfed.org/>

Capital Structure Determination:

In situations in which a small water and sewer utility has debt capital in excess of 75%, FA believes it is appropriate to use a hypothetical capital structure that limits debt to 75% of total capital. Although it could be argued that Staff should also use a hypothetical capital structure if a company's capital structure is not cost efficient due to a high equity ratio, FA decided not to limit the amount of equity in the capital structure. If a company shows that its capital structure consists of more than 75% debt, then a hypothetical capital structure of 75% debt and 25% equity will be assumed. For all situations wherein a small water and sewer company has debt capital less than 75%, the company's actual capital structure will be used in determining the company's ROR. In all situations, Staff will evaluate whether the actual cost of debt seems reasonable for the given rating used to estimate the cost of equity. If not reasonable, then Staff may use a hypothetical cost of debt.

FA will rely on the company's financial statements to estimate the ratemaking capital structure if these financial statements provide an accurate and reliable representation of the capital that supports the company's investment in the utility's assets. However, if a company's rate base is not consistent with the carrying value of the assets in the financial statements, Staff will impute the capital structure by subtracting the amount of debt from rate base to estimate the amount of equity in the capital structure.

Cost of Common Equity:

FA recognizes that the estimation of the cost of common equity for a utility is not an exact science. Therefore, FA will recommend a reasonable ROE range based on the specific circumstances of each case. For example, absent specific circumstances, FA usually recommends an ROE range of no more than 100 basis points in major rate cases. Staff may recommend the higher end of its range if the company is privately held and not marketable. Staff may recommend the low end of its range if the water and sewer operations are owned by a larger parent company that is publicly-traded or the company is considered to be marketable from an acquisition perspective.

Receivership Cases:

Due to the uncertainty of how utility systems in receivership are or will be capitalized after the systems are no longer under the control of the receiver, Staff will use a hypothetical capital structure and rate of return in such situations. However, the intent of allowing a rate of return for utility operations in receivership is not to allow monies to be distributed to any owners and/or receivers.

Disclaimer:

This procedure may be subject to change at any time based on Staff's research on other approaches to address small water and sewer ROE recommendations and the availability of additional and/or better resources that may allow for improvement to the determination of appropriate rates of return for small water and sewer.

Case Examples for WACC Recommendation Using an Actual Capital Structure and a Hypothetical Capital Structure

Actual Capital Structure Example:

Test year of Dec. 31, 200X for this case indicates the following regarding capital structure:

XYZ Sewer Systems, Inc.
12/31/20XX

Common Stock	\$102,000	51%
Debt	<u>\$98,000</u>	<u>49%</u>
Total Capital	\$200,000	100%

Most of the time the amount of common stock will be broken down by par value of common stock, other paid in capital and retained earnings. One should make sure to include all components of common equity in this balance.

The weighted cost of debt is as follows:

<u>Debt Issuance</u>	<u>Amount</u>	<u>Cost</u>	<u>Percent</u>	<u>Weighted Cost of Debt</u>
N/P United Bank of Union	\$55,000	6.25%	56.12%	3.51%
N/P Jane Doe Corp.	\$25,000	5.50%	25.51%	1.40%
N/P Doe Construction, Inc.	<u>\$18,000</u>	5.50%	<u>18.37%</u>	<u>1.01%</u>
	\$98,000		100.00%	5.92%

Based on the S&P ratings matrix the company has a "Significant" FRP; and based on the company's ability to obtain a commercial loan from United Bank of Union, the BRP is considered "Strong". Based on Staff's determination of a "Significant" FRP and a

“Strong” BRP, XYZ Sewer Systems credit profile is indicative of a ‘BBB’ rating as shown in the attached matrix.

Now that we have an estimated credit rating we need to determine a current yield on debt of the same rating. Staff currently uses Moody’s public utility bond yields for at least the base starting yield. Because yields can fluctuate from month-to-month, Staff believes it is appropriate to use a 3-month average yield.

Although the following example is only based on the debt yield for one month, September 2015, simply use the same methodology for the other two months and average the 3 yields to determine the appropriate reference yield.

Based on the methodology discussed above, the risk premium would be added to the reference yield consistent with a ‘BBB’ rating. The Moody’s BBB utility bond yield for September 2015 was 5.42%. Because the company is a privately-owned enterprise that doesn’t issue its own debt or its parent company doesn’t issue debt, you add a 4% risk premium to arrive at a cost of equity recommendation of 9.42%(see table below). The rate of return is as follows:

XYZ Sewer Systems, Inc. Cost of Capital as of 12/31/201X				
Capital Component	Amount	%Capital	Cost	Weighted Cost
Common equity	\$102,000	51.00%	9.42%	4.80%
Long-term debt	<u>\$ 98,000</u>	<u>49.00%</u>	5.92%	<u>2.90%</u>
	\$200,000	100.00%		7.70%

Hypothetical Capital Structure Example:

ABC Water & Sewer Company is a company that is in receivership.

A hypothetical capital structure based on the proxy group capital structure from the most recent Missouri American Water Company (MAWC) case will be used. The hypothetical capital structure is as follows:

ABC Water & Sewer

SR-2016-0202
Schedule MJB-r2

Company

Common Stock	49.75%
Debt	50.25%
Total Capital	100%

The most recent MAWC case was Case No. WR-2011-0337. The proxy group capital structure in that case was 49.75% common equity and 50.25% debt.

Based on the S&P ratings matrix, the hypothetical capital structure presents an “Aggressive” FRP. The company is also viewed as having a “Satisfactory” BRP due to its inability to access commercial loan(s). Based on Staff’s determination of an “Aggressive” FRP and a “Satisfactory” BRP, ABC Water & Sewer Company’s credit profile is indicative of a ‘BB’ rating as shown in the attached matrix.

Because Moody’s does not publish utility bond yield data for ‘BB’ rated bonds, Staff will use the spread between a ‘BBB’ corporate bond and a ‘BB’ corporate bond⁸ and apply the spread to the ‘BBB’ rated Moody’s utility bond yield data to impute the ‘BB’ rated bond yield average. Because yields can fluctuate from month-to-month, Staff believes it is appropriate to use a 3-month average yield.

Although the following example is only based on the debt yield for one month, September 2015, simply use the same methodology for the other two months and average the 3 yields to determine the appropriate reference yield.

The September 2015 Bank of America Merrill Lynch BBB and BB Corporate Bond yields were 4.07% and 5.65%, respectively. This equals a spread of 1.58%.

Based on the methodology discussed above, the risk premium and the spread between BBB and BB corporate bond yields would be added to the reference yield consistent with a ‘BBB’ rating to impute the ‘BB’ rated utility bond yield. The BBB Moody’s public utility bond yield was 5.42% as of September 2015. We then add the 158 basis point spread between BBB and BB BAML corporate bond yields to estimate a BB utility bond yield of 7.00% (see table below). Because the company is a privately-owned enterprise that doesn’t issue its own debt or its parent company doesn’t issue debt, you add a 4% risk premium to arrive at a cost of equity recommendation of 11.00%. The rate of return recommendation based on the hypothetical capital structure of 75% debt and 25% equity is as follows:

⁸ Corporate bond spread data can be found at the Federal Reserve Bank of St. Louis’ website: <https://research.stlouisfed.org/>

ABC Water & Sewer Company
Hypothetical Cost of Capital

Capital Component	%Capital	Cost	Weighted Cost
Common equity	49.75%	11.00%	5.47%
Long-term debt	<u>50.25%</u>	7.00%	<u>3.52%</u>
	100.00%		8.99%