Exhibit No.:
Issue: *Rate of Return/Capital Structure*
Witness: *Shana Griffin*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Direct Testimony*
Case No.: *WR-2016-0064*
Date Testimony Prepared: *April 15, 2016*

MISSOURI PUBLIC SERVICE COMMISSION

COMMISSION STAFF DIVISION

DIRECT TESTIMONY

OF

SHANA GRIFFIN

HILLCREST UTILITY OPERATING COMPANY, INC.

CASE NO. WR-2016-0064

Jefferson City, Missouri
April 2016

***** Denotes Highly Confidential Information *****

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SHANA GRIFFIN

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DIRECT TESTIMONY

OF

SHANA GRIFFIN

HILLCREST UTILITY OPERATING COMPANY, INC.

CASE NO. WR-2016-0064

Q. Please state your name.

A. My name is Shana Griffin.

Q. By whom are you employed and in what capacity?

A. I am employed by the Missouri Public Service Commission (Commission) as a Utility Regulatory Auditor III in the Financial Analysis Unit of the Operational Analysis Department, Commission Staff Division.

Q. What is your educational background?

A. In May 2007, I earned a Bachelor of Science in Accountancy and a Master of Accountancy degree from the University of Missouri-Columbia. My accounting degree required an understanding of financial concepts, including the cost of capital.

On June 21, 2010, I was awarded the Certified Rate of Return Analyst (CRRA) professional designation by the Society of Utility Regulatory Financial Analysts (SURFA). This designation is awarded based upon experience and successful completion of a written examination, which I completed during my attendance at a SURFA conference in April 2010.

Q. Have you filed testimony in other cases before this Commission?

A. Yes. Please see Schedule SG-d1.

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

A. Yes. I have developed rate of return recommendations for numerous small water and sewer rate cases and have made recommendations in finance cases, small water and sewer certificate cases, and telephone certificate cases.

EXECUTIVE SUMMARY

Q. What is the purpose of your direct testimony?

A. The purpose of my direct testimony is to provide Staff's capital structure, return on equity (ROE) and rate of return (ROR) recommendation for Hillcrest Utility Operating Company, Inc. (Hillcrest) to the Commission.

Q. What is Staff's recommended capital structure for Hillcrest?

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

Q. What was Staff's initial recommended cost of debt, ROE and ROR?

A. In December 2015, Staff recommended a cost of debt of 8.88%, an ROE of 12.88% and an overall ROR of 9.88%. Staff's ROR recommendation was used as an input in the computation of Hillcrest's revenue requirement.

Table 1 below shows Staff's initial recommended capital structure, cost of debt, ROE and the resulting ROR.

continued on next page

[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 SG-d2)

Table 1

Hillcrest Weighted Average Cost of Capital

Capital Component	**Percentage of Capital**	**Cost**	**Weighted Cost**
Common Equity	25.00%	12.88%	3.22%
Debt	75.00%	8.88%	6.66%
Total(Rate Base)	100.00%		9.88%
ROE =	**12.88%**		
ROR =	**9.88%**		

Note: Cost of Debt is based on debt costs tied to an assumed 'B' rated bond yield cost.

Q. If Staff updated its recommendation based on recent market data, what would Staff's recommendation be for a cost of debt, ROE and ROR based on the most recent three months of bond yield data (January 2016, February 2016 and March 2016)?

A. Staff would recommend a cost of debt of 10.13%, an ROE of 14.13% and an overall ROR of 11.13%.

Hillcrest Weighted Average Cost of Capital

Capital Component	**Percentage of Capital**	**Cost**	**Weighted Cost**
Common Equity	25.00%	14.13%	3.53%
Debt	75.00%	10.13%	7.60%
Total(Rate Base)	100.00%		11.13%
ROE =	**14.13%**		
ROR =	**11.13%**		

Note: Cost of Debt is based on debt costs tied to an assumed 'B' rated bond yield

Q. What is Staff's final recommendation for cost of debt, ROE and ROR for Hillcrest in this case?

A. Although Staff is not officially updating its recommendation that is embedded in the revenue requirement for this case, Staff believes it is important to understand and consider recent capital market events that have impacted higher-risk securities, such as junk bond markets. Consequently, to the extent the Commission believes these recent events should be considered in an allowed ROR for Hillcrest, Staff considers an ROE range of 12.88% to 14.13%, a cost of debt range of 8.88% to 10.13% and an overall ROR range of 9.88% to 11.13%, to be fair and reasonable, based on a capital structure of 75% debt and 25% equity. Although Staff's initial revenue requirement recommendation in this case is based on the low end of the aforementioned range, Staff believes it is important to discuss and consider recent significant changes to the junk bond markets. Staff's recommended range considers a recent widening of spreads between investment grade and non-investment grade bond yields, but also considers that spreads this wide have not been typical over the last five years. Staff will discuss later in its testimony the recent events in context of historical capital market costs to provide the Commission with as much information as possible to make an informed decision.

COST OF DEBT

Q. Does Hillcrest have an actual debt cost that should be used for purposes of setting a fair and reasonable allowed ROR?

A. No.

Q. Does Hillcrest have a cost rate assigned to any financing agreements it has with another entity?

A. Yes. Hillcrest has a financing agreement with Fresh Start Venture LLC (Fresh Start) that has a 14% rate assigned to it.

Q. Why isn't Staff recommending that this rate be included in Hillcrest's authorized ROR?

A. Staff does not consider this rate to be consistent with that of a passive third-party debt investor. The investors in this financing agreement are also the primary equity contributors to Hillcrest. (See HC Schedule SG-d5) The only individual and/or entity that is disadvantaged by this contract is Josiah Cox and Central States Water Company. If Hillcrest were to default on the 14% financing agreement, then the investors that own the debt and a majority of the equity, ** ____ ____________ ** would most likely be the only investors with any remaining claim to cash flow from Hillcrest. Therefore, Staff estimated a cost of debt based on debt yields consistent with third-party debt investors in junk bonds.

Q. Would there be any need for the 14% financing agreement if Central States Water Company and Josiah Cox were no longer investors?

A. No. The 14% financing agreement is simply a mechanism to ensure that the primary monetary capital providers ** __________ ** receive capital before their equity partner, Josiah Cox.

Q. Because Staff does not view the 14% financing agreement as an arms-length, passive debt investor transaction, how did Staff determine a reasonable cost of debt to use in its recommended ROR?

A. As detailed in Schedule SG-d2, Staff estimates a fair and reasonable cost of debt by estimating a credit rating consistent with the Business Risk Profile (BRP) and Financial Risk Profile (FRP) Staff assigns to the company. Staff is guided by Standard and Poor's (S&P's) benchmarks detailed in its May 27, 2009 report, which assigns FRP's based on the amount of debt in capital structures. Based on this methodology, Staff assigned Hillcrest's debt a 'B' rating, which is a junk bond rating. At the time Staff provided its

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recommendation for Staff's revenue requirement recommendation in this case, Staff estimated the most recent three month (through October 2015) average 'B' bond yield to be 8.88%. Consequently, even a "highly speculative" rated bond had a yield significantly below the rate Hillcrest requested and believes should be allowed in this case. It is also noteworthy that the rate Fresh Start assigned to Hillcrest was determined during the summer of 2014, which was a period of much lower debt costs for junk bonds. If Staff had estimated a cost of debt based on the period in which the contract with Fresh Start was executed, Staff's cost of debt recommendation would have been approximately 250 basis points lower. Such an approach would be more similar to traditional cost of service rate regulation in which an embedded cost of debt is used in setting the allowed ROR.

Q. Why did Staff assume a 'B' rating for purposes of estimating Hillcrest's cost of debt and cost of equity?

A. Staff used S&P's benchmarks from S&P's credit rating methodology, (See Schedules SG-d2 and SG-d3), to estimate Hillcrest's business and financial risk. A 'B' rating is based on Staff's assessment of Hillcrest's business risk being consistent with a '*Satisfactory'* Business Risk Profile (BRP) and Staff's use of a hypothetical capital structure that is consistent with a '*Highly Leveraged'* FRP. As outlined in Schedule SG-d3, a '*Highly Leveraged'* FRP is indicated by a Debt/Capital ratio of greater than 60%, according to S&P benchmarks.

Q. What is the basis for Staff assigning a '*Satisfactory'* BRP to Hillcrest?

A. It is based on Josiah Cox's representation to Staff that Hillcrest has been unable to attract traditional debt capital from third-party debt investors through commercial banks or other traditional debt investors. Both the debt and equity financial capital invested in Hillcrest is from the ** ______ **. Consequently, the capital provided through Fresh Start, by the ** ______ **, does not demonstrate to Staff that Hillcrest has been able to attract debt capital. (See HC Schedule SG-d5).

Q. What is the basis for Staff assigning a *'Highly Leveraged'* FRP to Hillcrest?

A. According to the financial risk indicators, which are based on *Standard and Poor's Business/ Financial Risk Matrix,* (See Schedule SG-d4), Staff assigned a *'Highly Leveraged'* FRP due to Staff's use of a hypothetical capital structure that assumes a high percentage of debt. As of September 30, 2015, Hillcrest represented that approximately 77% of its rate base ($879,750/$1,148,663) was capitalized with the capital provided through Fresh Start. However, the capital provided through Fresh Start is not true debt capital. Because Mr. Cox represented to Staff that his plan had been to use a high amount of leverage for purposes of financing the Hillcrest system, Staff assumed a highly leveraged capital structure of 75% debt and 25% equity for purposes of its recommended ROR. As explained in Schedule SG-d2, Staff believes it is appropriate to limit the amount of debt to 75% of total capital because at extreme levels of leverage, it becomes even more difficult to estimate a company's credit rating, and consequently its cost of capital. Additionally, the use of an extreme amount of leverage also can result in a cost of capital that is not prudent.

<u>RETURN ON EQUITY</u>

Q. How did Staff estimate Hillcrest's ROE?

A. Consistent with Staff's Small Utility Return on Equity (ROE)/Rate of Return (ROR) Methodology for estimating ROE, explained in detail in Schedule SG-d2, Staff added a 4% risk premium to a 3-month (August, September, and October 2015) average of an imputed *'B'* rated yield for long-term public utility bonds.

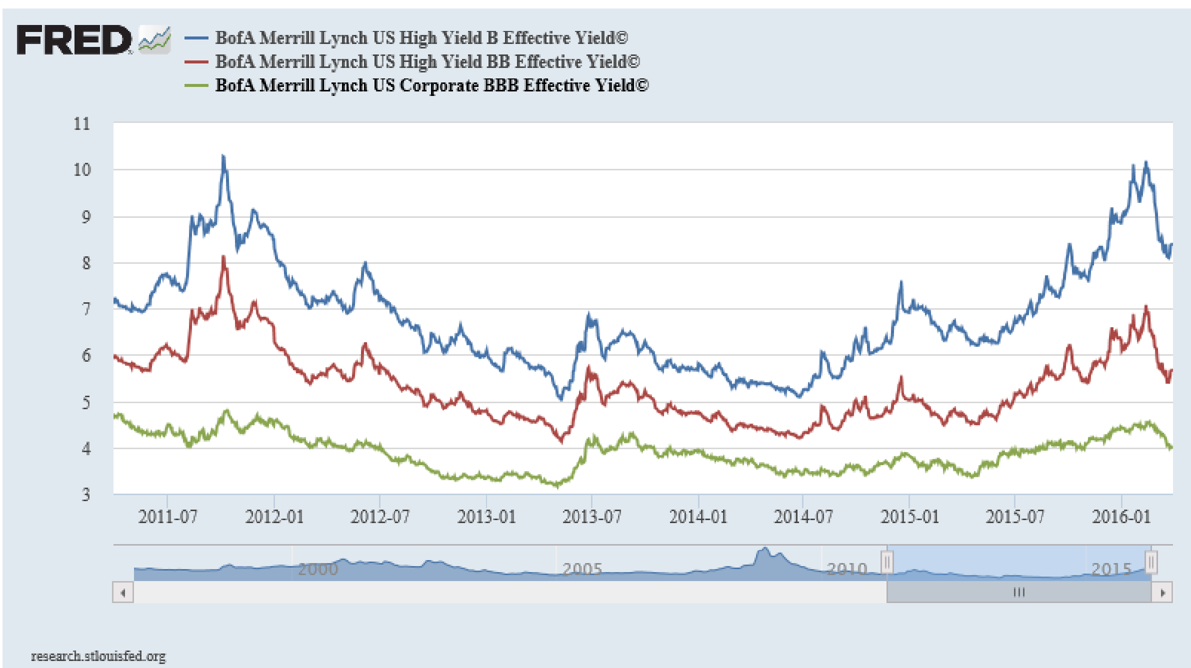
Q. What was Staff's initial ROE recommendation for Hillcrest?

A. Adding a 4% risk premium to the 3-month (August, September, and October 2015) average of an imputed *'B'* rated yield for long-term public utility bonds of 8.88% (Staff's cost of debt recommendation), Staff estimated an ROE of 12.88%.

<u>BOND MARKET CHANGES SINCE STAFF'S INITIAL RECOMMENDATION</u>

Q. Has Staff noticed any significant changes in the long-term bond markets since Staff made its initial recommendation using bond yield data through October 2015?

A. Yes. As shown in the graph below, during the first couple of months in 2016, the spreads between 'BBB' and 'B' rated corporate bond yields had widened to a level not seen since October 2011. However, these spreads narrowed again during March 2016.



Q. If Staff updated its ROE and cost of debt information based on the most recent three months (January 2016, February 2016, and March 2016) of public utility bond yield data, how would this impact the ROR?

A. Using the same capital structure of 75% debt and 25% equity, Staff's cost of debt input would be 10.13%. Adding a 4% risk premium to the cost of debt input, Staff's cost of equity input would be 14.13%. This would result in an overall ROR of 11.13%.

Q. How should the Commission consider recent market information in determining an allowed ROR for Hillcrest?

A. Staff recommends the Commission consider a range of capital cost estimates for purposes of setting a fair and reasonable allowed ROR for Hillcrest. Staff cannot predict what will happen to capital costs over the next several years, but as the chart above shows, the recent dramatic increase in junk bond yields has only occurred a couple of times since 2011, with most of the period showing that 'B' rated bonds were 7% or less. However, Staff cannot predict whether junk bond yields may stay higher than levels that occurred over a majority of the time in the last five years. Consequently, Staff recommends the Commission consider an ROE range of 12.88% to 14.13%, a cost of debt range of 8.88% to 10.13% and an overall ROR range of 9.88% to 11.13%.

SUMMARY AND CONCLUSIONS

Q. Would you please summarize Staff's conclusions presented in your direct testimony?

A. Yes. Staff recommends a hypothetical capital structure consisting of 75% debt and 25% equity. Staff recommends applying a cost of debt range of 8.88% to 10.13% and an ROE range of 12.88% to 14.13% to this capital structure, which results in an overall ROR range of 9.88% to 11.13%. Staff's recommended range considers a recent widening of spreads between investment grade and non-investment grade bond yields, but also considers that spreads this wide have not been typical over the last five years.

Q. Does this conclude your direct testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Water Rate Increase Request of Hillcrest Utility Operating Company, Inc.	)))))	Case No. WR-2016-0064

AFFIDAVIT OF SHANA GRIFFIN

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW Shanna Griffin and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing Direct Testimony; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Shana Griffin
Shana Griffin

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 15th day of April, 2016.

Dianna L. Vaught
Notary Public

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

SHANA GRIFFIN

Educational and Employment Background and Credentials

I am currently employed as a Utility Regulatory Auditor III for the Missouri Public Service Commission (Commission). I accepted the position of Utility Regulatory Auditor I in December 2008.

In May 2007, I earned a Bachelor of Science in Accountancy and a Master of Accountancy degree from the University of Missouri-Columbia. My accounting degree required an understanding of financial concepts, including the cost of capital.

On June 21, 2010, I was awarded the Certified Rate of Return Analyst (CRRA) professional designation by the Society of Utility and Regulatory Financial Analysts (SURFA). This designation is awarded based upon experience and successful completion of a written examination, which I completed during my attendance at a SURFA conference in April 2010.

Prior to October 11, 2014, I have filed testimony and participated in cases before the Commission under my maiden name of Shana Atkinson. I have developed rate of return recommendations for numerous finance cases, small water and sewer rate cases and have assisted as needed in small water and sewer certificate cases.

SUMMARY OF CASE PARTICIPATION

SHANA GRIFFIN

Date Filed	Issue	Case Number	Exhibit	Company Name
3/25/2016	Rate of Return Capital Structure	ER-2016-0023	Cost of Service Report	Empire District Electric Company
3/24/2015	Rate of Return Capital Structure	ER-2014-0351	Surrebuttal	Empire District Electric Company
3/9/2015	Rate of Return Capital Structure	ER-2014-0351	Rebuttal	Empire District Electric Company
1/29/2015	Rate of Return Capital Structure	ER-2014-0351	Cost of Service Report	Empire District Electric Company
Summary of Case Participation as Shana Atkinson now known as Shana Griffin				
10/3/2014	Financing	WO-2014-0340	Rebuttal	Brandco Investments, LLC and Hillcrest Utility Operating Company, Inc.
9/12/2014	Rate of Return Capital Structure	WR-2014-0167	Rebuttal	Hickory Hills Water & Sewer Company
9/12/2014	Rate of Return Capital Structure	SR-2014-0166	Rebuttal	Hickory Hills Water & Sewer Company
5/1/2014	Rate of Return Capital Structure	HR-2014-0066	Cost of Service Report	Veolia Energy Kansas City, Inc.
1/31/2014	Rate of Return Capital Structure	WR-2013-0461	Surrebuttal	Lake Region Water & Sewer Company
1/31/2014	Rate of Return Capital Structure	SR-2013-0459	Surrebuttal	Lake Region Water & Sewer Company

SUMMARY OF CASE PARTICIPATION

SHANA GRIFFIN

Date Filed	Issue	Case Number	Exhibit	Company Name
11/15/2013	Rate of Return Capital Structure	WR-2013-0461	Cost of Service Report	Lake Region Water & Sewer Company
11/15/2013	Rate of Return Capital Structure	SR-2013-0459	Cost of Service Report	Lake Region Water & Sewer Company
2/4/2013	Rate of Return Capital Structure	ER-2012-0345	Surrebuttal	Empire District Electric Company
1/16/2013	Rate of Return Capital Structure	ER-2012-0345	Rebuttal	Empire District Electric Company
11/30/2012	Rate of Return Capital Structure	ER-2012-0345	Cost of Service Report	Empire District Electric Company
8/20/2012	Rate of Return Capital Structure	ER-2012-0345	Interim Rebuttal	Empire District Electric Company
5/6/2011	Rate of Return Capital Structure	ER-2011-0004	True-Up Direct	Empire District Electric Company
4/28/2011	Rate of Return Capital Structure	ER-2011-0004	Surrebuttal	Empire District Electric Company
4/18/2011	Rate of Return Capital Structure	ER-2011-0004	Rebuttal	Empire District Electric Company
2/23/2011	Rate of Return Capital Structure	ER-2011-0004	Cost of Service Report	Empire District Electric Company
4/23/2010	Rate of Return Capital Structure	ER-2010-0130	Surrebuttal	Empire District Electric Company

SUMMARY OF CASE PARTICIPATION

SHANA GRIFFIN

Date Filed	Issue	Case Number	Exhibit	Company Name
4/02/2010	Rate of Return Capital Structure	ER-2010-0130	Rebuttal	Empire District Electric Company
2/26/2010	Rate of Return Capital Structure	ER-2010-0130	Cost of Service Report	Empire District Electric Company
1/13/2010	Rate of Return Capital Structure	WR-2010-0111	Cost of Service Report	Lake Region Water & Sewer Company
1/13/2010	Rate of Return Capital Structure	SR-2010-0110	Cost of Service Report	Lake Region Water & Sewer Company
10/20/2009	Rate of Return Capital Structure	GR-2009-0434	Cost of Service Report	Empire District Gas Company

Small Utility

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

Methodology

Prepared by

Financial Analysis Department
(Shana Griffin, Zephania Marevangepo 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 Mergent[3] + 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 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

[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 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 loan or the

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[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.

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

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' website[7] 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	$98,000	49%
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:

Debt Issuance	Amount	Cost	Percent	Weighted Cost of Debt
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.	$18,000	5.50%	18.37%	1.01%
	$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	$ 98,000	49.00%	5.92%	2.90%
	$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
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 bond[8] 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:

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	50.25%	7.00%	3.52%
	100.00%		8.99%

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

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Criteria | Corporates | General:

Criteria Methodology: Business Risk/Financial Risk Matrix Expanded

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Criteria Methodology: Business Risk/Financial Risk Matrix Expanded

(Editor's Note: In the previous version of this article published on May 26, certain of the rating outcomes in the table 1 matrix were missated. A corrected version follows.)

Standard & Poor's Ratings Services is refining its methodology for corporate ratings related to its business risk/financial risk matrix, which we published as part of 2008 Corporate Ratings Criteria on April 15, 2008, on RatingsDirect at www.ratingsdirect.com and Standard & Poor's Web site at www.standardandpoors.com.

This article amends and supersedes the criteria as published in Corporate Ratings Criteria, page 21, and the articles listed in the "Related Articles" section at the end of this report.

This article is part of a broad series of measures announced last year to enhance our governance, analytics, dissemination of information, and investor education initiatives. These initiatives are aimed at augmenting our independence, strengthening the rating process, and increasing our transparency to better serve the global markets.

We introduced the business risk/financial risk matrix four years ago. The relationships depicted in the matrix represent an essential element of our corporate analytical methodology.

We are now expanding the matrix, by adding one category to both business and financial risks (see table 1). As a result, the matrix allows for greater differentiation regarding companies rated lower than investment grade (i.e., 'BB' and below).

Table 1

Business And Financial Risk Profile Matrix

Business Risk Profile	Financial Risk Profile					
	Minimal	Modest	Intermediate	Significant	Aggressive	Highly Leveraged
Excellent	AAA	AA	A	A-	BBB	--
Strong	AA	A	A-	BBB	BB	BB-
Satisfactory	A-	BBB+	BBB	BB+	BB-	B+
Fair	--	BBB-	BB+	BB	BB-	B
Weak	--	--	BB	BB-	B+	B-
Vulnerable	--	--	--	B+	B	CCC+

These rating outcomes are shown for guidance purposes only. Actual rating should be within one notch of indicated rating outcomes.

The rating outcomes refer to issuer credit ratings. The ratings indicated in each cell of the matrix are the midpoints of a range of likely rating possibilities. This range would ordinarily span one notch above and below the indicated rating.

Business Risk/Financial Risk Framework

Our corporate analytical methodology organizes the analytical process according to a common framework, and it divides the task into several categories so that all salient issues are considered. The first categories involve fundamental business analysis; the financial analysis categories follow.

Our ratings analysis starts with the assessment of the business and competitive profile of the company. Two companies with identical financial metrics can be rated very differently, to the extent that their business challenges and prospects differ. The categories underlying our business and financial risk assessments are:

Business risk
- Country risk
- Industry risk
- Competitive position
- Profitability/Peer group comparisons

Financial risk
- Accounting
- Financial governance and policies/risk tolerance
- Cash flow adequacy
- Capital structure/asset protection
- Liquidity/short-term factors

We do not have any predetermined weights for these categories. The significance of specific factors varies from situation to situation.

Updated Matrix

We developed the matrix to make explicit the rating outcomes that are typical for various business risk/financial risk combinations. It illustrates the relationship of business and financial risk profiles to the issuer credit rating.

We tend to weight business risk slightly more than financial risk when differentiating among investment-grade ratings. Conversely, we place slightly more weight on financial risk for speculative-grade issuers (see table 1, again). There also is a subtle compounding effect when both business risk and financial risk are aligned at extremes (i.e., excellent/minimal and vulnerable/highly leveraged.)

The new, more granular version of the matrix represents a refinement--not any change in rating criteria or standards--and, consequently, holds no implications for any changes to existing ratings. However, the expanded matrix should enhance the transparency of the analytical process.

Financial Benchmarks

Table 2

Financial Risk Indicative Ratios (Corporates)

	FFO/Debt (%)	Debt/EBITDA (x)	Debt/Capital (%)
Minimal	greater than 60	less than 1.5	less than 25
Modest	45-60	1.5-2	25-35
Intermediate	30-45	2-3	35-45
Significant	20-30	3-4	45-50
Aggressive	12-20	4-5	50-60
Highly Leveraged	less than 12	greater than 5	greater than 60

How To Use The Matrix--And Its Limitations

The rating matrix indicative outcomes are what we typically observe--but are not meant to be precise indications or guarantees of future rating opinions. Positive and negative nuances in our analysis may lead to a notch higher or lower than the outcomes indicated in the various cells of the matrix.

In certain situations there may be specific, overarching risks that are outside the standard framework, e.g., a liquidity crisis, major litigation, or large acquisition. This often is the case regarding credits at the lowest end of the credit spectrum--i.e., the 'CCC' category and lower. These ratings, by definition, reflect some impending crisis or acute vulnerability, and the balanced approach that underlies the matrix framework just does not lend itself to such situations.

Similarly, some matrix cells are blank because the underlying combinations are highly unusual--and presumably would involve complicated factors and analysis.

The following hypothetical example illustrates how the tables can be used to better understand our rating process (see tables 1 and 2).

We believe that Company ABC has a satisfactory business risk profile, typical of a low investment-grade industrial issuer. If we believed its financial risk were intermediate, the expected rating outcome should be within one notch of 'BBB'. ABC's ratios of cash flow to debt (35%) and debt leverage (total debt to EBITDA of 2.5x) are indeed characteristic of intermediate financial risk.

It might be possible for Company ABC to be upgraded to the 'A' category by, for example, reducing its debt burden to the point that financial risk is viewed as minimal. Funds from operations (FFO) to debt of more than 60% and debt to EBITDA of only 1.5x would, in most cases, indicate minimal.

Conversely, ABC may choose to become more financially aggressive--perhaps it decides to reward shareholders by borrowing to repurchase its stock. It is possible that the company may fall into the 'BB' category if we view its financial risk as significant. FFO to debt of 20% and debt to EBITDA 4x would, in our view, typify the significant financial risk category.

Still, it is essential to realize that the financial benchmarks are guidelines, neither gospel nor guarantees. They can vary in nonstandard cases: For example, if a company's financial measures exhibit very little volatility, benchmarks may be somewhat more relaxed.

Schedule SG-d3

Moreover, our assessment of financial risk is not as simplistic as looking at a few ratios. It encompasses:

- a view of accounting and disclosure practices;
- a view of corporate governance, financial policies, and risk tolerance;
- the degree of capital intensity, flexibility regarding capital expenditures and other cash needs, including acquisitions and shareholder distributions; and
- various aspects of liquidity--including the risk of refinancing near-term maturities.

The matrix addresses a company's standalone credit profile, and does not take account of external influences, which would pertain in the case of government-related entities or subsidiaries that in our view may benefit or suffer from affiliation with a stronger or weaker group. The matrix refers only to local-currency ratings, rather than foreign-currency ratings, which incorporate additional transfer and convertibility risks. Finally, the matrix does not apply to project finance or corporate securitizations.

Related Articles

Industrials' Business Risk/Financial Risk Matrix--A Fundamental Perspective On Corporate Ratings, published April 7, 2005, on RatingsDirect.

Table 1

Business And Financial Risk Profile Matrix

Business Risk Profile			--Financial Risk Profile--				
	Minimal	Modest	Intermediate	Significant	Aggressive	Highly Leveraged	
	<25%	*25-35%*	*35-45%*	*45-50%*	*50-60%*	*> 60%*	*Debt/Capital*
Excellent	AAA	AA	A	A	BBB	--	
Strong	AA	A	A	BBB	BB	BB	
Satisfactory	A	BBB	BBB	BB	BB	B	
Fair	--	BBB	BB	BB	BB	B	
Weak	--	--	BB	BB	B	B	
Vulnerable	--	--	--	B	B	CCC	

Note: These rating outcomes are general ratings as compared to S&P's actual matrix rating outcomes that have outcomes with specific notches. Staff is using more general outcomes based on S&P's Business and Financial Risk Profile Matrix because Staff's source for utility bond yield data, Mergent Bond Record (Moody's), does not report bond yield data for the specific notches within the rating categories.

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