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MISSOURI PUBLIC SERVICE COMMISSION

COMMISSION STAFF DIVISION

OPERATIONAL ANALYSIS

FINANCIAL ANALYSIS

REBUTTAL TESTIMONY

OF

DAVID MURRAY

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2015-0301

Jefferson City, Missouri
February 2016

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

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OF THE REBUTTAL TESTIMONY OF

DAVID MURRAY

MISSOURI-AMERICAN WATER COMPANY

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REBUTTAL TESTIMONY

OF

DAVID MURRAY

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2015-0301

Q. Please state your name.

A. My name is David Murray.

Q. Are you the same David Murray who prepared the Rate of Return Section of the Staff's Cost of Service Report?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to the direct testimony of Roger A. Morin (Dr. Morin) and Michael Gorman (Mr. Gorman). Dr. Morin sponsored rate-of-return (ROR) testimony on behalf of Missouri-American Water Company (MAWC). Mr. Gorman sponsored ROR testimony on behalf of The Office of the Public Counsel ("OPC"). I will address the issues related to a fair and reasonable allowed ROR to be applied to MAWC's water and sewer utility rate base for ratemaking purposes in this proceeding.

EXECUTIVE SUMMARY

Q. What is the fundamental disagreement you have with Dr. Morin and Mr. Gorman?

A. Both witnesses claim that their allowed return on common equity (ROE) recommendations are based on their estimates of MAWC's cost of equity. Dr. Morin's estimate of MAWC's cost of equity (COE) is 10.7% and Mr. Gorman's estimate of

MAWC's COE is 9.0%. Using cost of capital models with fair and reasonable inputs shows that the COE for water utility companies is no higher than the 7% range. Additionally, opinions and examples from investors and experts not involved in utility ratemaking corroborate Staff's opinion.

Q. Is Dr. Morin's recommended allowed ROE fair and reasonable when compared to the Commission's allowed ROEs of approximately 9.5% in the recent Ameren Missouri and Kansas City Power & Light Company ("KCPL") rate cases, Case Nos. ER-2014-0258 and ER-2014-0370, respectively?

A. No. Dr. Morin provides no justification as to why the Commission should allow MAWC a 10.7% ROE as compared to recent allowed ROEs granted by this Commission.

Q. Is Mr. Gorman's recommended allowed ROE fair and reasonable when compared to the Commission's recent decisions?

A. It is within the zone of reasonableness, but as Staff will detail later in its testimony, the relative difference between Mr. Gorman's recommendation for recent electric cases and this case is about 30 basis points. This supports Staff's recommendation to the Commission that it authorize MAWC an allowed ROE of 9.25%.

Q. How can the Commission use Dr. Morin's and Mr. Gorman's testimonies to inform itself on a fair and reasonable allowed ROE to award MAWC?

A. The Commission can evaluate the witnesses' evidence and opinions of the relative change, if any, in the utility industries' cost of capital environment since the Commission heard evidence in the KCPL and Ameren Missouri rate cases. Staff will attempt to highlight areas of each witness' testimony that may assist the Commission with this

determination. Staff also compared recent past testimonies of each witness to discern if their analysis shows much change in the cost of capital since the fall of 2014.

Q. Have events in the capital markets this past month caused a change in the utility industries' cost of capital?

A. No. Although the broader markets have significantly contracted, regulated utility stocks have actually done very well during January 2016. Additionally, utility bond yields have not changed significantly. Staff will provide a brief update on the capital markets later in this testimony.

Q. Is there a fundamental disagreement on the appropriate ratemaking capital structure to use for purposes of developing an allowed ROR?

A. Yes. MAWC recommends the Commission adopt MAWC's per books, subsidiary capital structure. Mr. Gorman recommends the Commission adopt a hypothetical capital structure based on his belief that MAWC's current per books, subsidiary capital structure is too heavily weighted with common equity. Staff recommends the Commission adopt American Water Works Company, Inc.'s ("American Water") consolidated capital structure for setting MAWC's allowed ROR. Staff also recommends the Commission apply American Water's consolidated costs of long-term debt, preferred stock and short-term debt to this capital structure. Although Staff explained in detail in the Staff Cost of Service Report why American Water's capital structure is most appropriate, Staff will address each witness' capital structure recommendations in its rebuttal testimony.

Q. Are there any other areas of Dr. Morin's and Mr. Gorman's testimony that you will address to assist the Commission in determining a fair and reasonable allowed ROE?

A. Yes. MAWC proposes a ratemaking mechanism, termed a Revenue Stability Mechanism (RSM), that it claims will allow it to more closely earn its allowed ROE on an annual basis. In order to understand and decide if the allowed ROE should be adjusted for adoption of such a mechanism, a fundamental and much debated issue should be considered. Staff has consistently argued that investors are most concerned with holding period returns, whether it is 1 year, 5 years, 10 years, etc. Staff's position has consistently been that utility equity investors are most concerned about longer, multi-year holding periods, and therefore their required risk premiums are based on the premise of a compound growth rate, which more accurately predicts ending wealth. If one believes that investors are influenced by annual volatility in cash flows, or even shorter periods such as quarterly cash flows, then this translates into investors lowering their required returns for such reduced volatility. Staff will address each witness' arguments regarding whether the Commission should reduce the allowed ROE if it allows the RSM.

SUMMARY OF DR. MORIN'S AND MR. GORMAN'S COST OF EQUITY ESTIMATES

Q. Please summarize Dr. Morin's estimated COE and the resulting recommended ROE.

A. Dr. Morin's recommended ROE is 10.7%, which is the upper end of his range of COE estimates of 10.1% to 10.7%. Dr. Morin's COE methodologies included the Discounted Cash Flow (DCF), Capital Asset Pricing Model (CAPM) and risk premium. The basis for the low end of Dr. Morin's range is his highest COE estimate using the constant-growth DCF, which assumes that investors expect to achieve a compounded increase in the stock prices of their water utility stock investment of 7.2% into perpetuity. The basis for the high end of Dr. Morin's range is his "Allowed Risk Premium" method which evaluates the

average difference between allowed ROEs for gas and electric utilities as compared to long-term Treasury bond yields. Dr. Morin adjusts the average difference between allowed ROEs and interest rates for a regression coefficient that results from the widening spread between allowed ROEs and interest rates. As can be seen in Table 6 on page 59 of Dr. Morin's Direct Testimony, all of the results from the other methodologies, except one version of the DCF, fall within Dr. Morin's range of 10.1% to 10.7%. Dr. Morin's DCF analysis using equity analysts' projected 5-year compound annual growth rates (CAGR) in Earnings Per Share (EPS) results in a COE estimate of 9.2%.

Dr. Morin applies his DCF and CAPM methods to a water utility proxy group. Other than Dr. Morin's use of Consolidated Water Company, which is not a regulated water distribution utility, Staff accepts Dr. Morin's water utility proxy group.

Q. Please summarize Mr. Gorman's estimated COE and resulting recommended allowed ROE.

A. Mr. Gorman's recommended allowed ROE is 9.0 percent, based on applying three methodologies (DCF, CAPM and risk premium method) to both a water and gas proxy group. Mr. Gorman applied three variants of the DCF – a constant-growth DCF using equity analysts' growth rates, a constant-growth DCF using sustainable growth rates, and a multi-stage DCF analysis (see Table 4 on page 41 of Mr. Gorman's Direct Testimony). Mr. Gorman incorporated all three methods to arrive at COE estimates of 9.2 percent based on the CAPM, 9.1 percent based on the risk premium method and 8.8 percent based on the DCF method (see Table 5 on page 53 of Mr. Gorman's Direct Testimony). Mr. Gorman used these results in developing his estimated COE range of 8.8 percent to 9.2 percent, with a mid-point estimate of 9.0 percent.

CAPITAL MARKET UPDATE

Q. Have there been significant capital market issues in the past month?

A. Yes. January 2016 has been a turbulent month for capital markets. The S&P 500 and the DJIA have each had significant negative total returns during the first month of 2016.

Q. How have regulated utility stocks performed during the past month?

A. Actually, they have performed quite well. The capital market issues of the past month seems to be different from those that the US economy experienced in late 2008 and early 2009 when even utility company stocks and bonds were sold off. The same is not occurring now.

According to the February 1, 2016 edition of the U.S. Capital Advisors' "USCA Weekly Downstream Utility Update,"[1] the year-to-date (YTD) total return for the regulated water, gas and electric industry was 7.4%, 6.1% and 3.8% respectively. Considering that the S&P 500, DJIA and the NASDAQ all had YTD total returns of -5%, -5.4% and -7.8% during the same month, the fear factor driving the broader markets down has driven the safe-harbor sectors up. This would certainly imply a wider than traditional spread in the cost of equity for the broader markets as compared to defensive sectors, such as utilities.

Q. Have utility bonds reacted similarly to utility stocks?

A. No. They seemed to have held fairly steady even though interest rates on 10-year Treasury bonds have dropped to below 2%, which was the case in late 2014 and early 2015. Consequently, it is prudent to conclude that the cost of capital for utilities has

[1] Daniel M. Fidell, "USCA Weekly Downstream Utility Update," U.S. Capital Advisors, February 1, 2016.

not changed enough to cause the Commission to move significantly from its recent authorized returns for Missouri's utilities.

CAPITAL STRUCTURE

Q. Do the parties agree on how to determine an appropriate capital structure for purposes of determining a fair and reasonable allowed ROR to apply to MAWC's rate base?

A. No. Although Dr. Morin does not sponsor the specific calculations for MAWC's recommended capital structure, he indicates that his ROE recommendation is based on MAWC's proposed common equity ratio of 52.37%, as detailed in Company witness Scott W. Rungren's testimony. Mr. Rungren's recommended capital structure is based on a *pro forma* estimate of MAWC's per books subsidiary capital structure as of January 31, 2016. Staff does not take issue with the date of the proposed capital structure because this is the agreed-to true-up date, but MAWC's rates should not be set based on MAWC's per books balance sheet.

Mr. Gorman recommends the use of a hypothetical capital structure that limits the common equity ratio to 50.57%. Mr. Gorman's common equity ratio recommendation is based on the common equity ratio parties in Case No. WR-2011-0337 agreed would be used for purposes of determining an allowed ROR to apply to MAWC's subsequent Infrastructure System Replacement Surcharge (ISRS) filings between that case and this general rate case.

Staff recommends the Commission adopt American Water's consolidated capital structure for purposes of setting MAWC's allowed ROR. Staff explains why this is appropriate in the Staff Cost of Service Report. As shown on Schedule 6 of Appendix 2 attached to the Staff Cost of Service Report, Staff's common equity ratio recommendation is 46.99%. Staff also includes a small amount of short-term debt in its recommended capital

structure due to the fact that on average, American Water has been carrying a higher balance of short-term debt than its balances of construction work in progress (CWIP), which implies that some short-term debt is supporting American Water's long-term assets.

Q. Has the Commission ever ruled on the dispute as to whether MAWC's ratemaking capital structure should be based on MAWC's per books subsidiary capital structure or American Water's consolidated capital structure?

A. No.

Q. What is Dr. Morin's argument of using MAWC's per books subsidiary capital structure to set MAWC's allowed ROR?

A. Dr. Morin makes a fairly generic argument that in any situation in which there is a parent-subsidiary relationship, the capital structure used to determine the subsidiary's cost of capital should be the operating company's (i.e. the subsidiary) own capital structure.[2]

Dr. Morin goes on further to indicate that the "Stand-Alone" approach, which means strictly using subsidiary financial statements and capital costs, views MAWC as an independent operating company with its own capital costs.[3] He maintains that each subsidiary pays "different rates for the use of investor capital, such as long-term debt capital, because investors recognize the differences in the capital structure, risk and prospects between subsidiaries."[4]

Q. What does Dr. Morin fail to recognize with his generic argument?

A. MAWC is not viewed and/or financially managed as an independent operating company with capital costs based on its stand-alone business risk and financial risk. In fact, MAWC is not even rated by any of the rating agencies because it receives almost all of its

[2] Morin Direct, p. 16, ll. 3-8.
[3] *Id.*, p. 16, ll. 9-22.
[4] *Id.*, p. 17, ll. 9-12.

debt financing from American Water's financing subsidiary, American Water Capital Corporation (AWCC). The cost of debt issued by AWCC is based on American Water's consolidated risk profile, which includes both American Water's business and financial risk. Consequently, when debt investors are determining the required return on the debt assigned to MAWC through internal loan documents, they are evaluating the amount of leverage in American Water's capital structure, not MAWC's capital structure. American Water's financial risks and business risks are the basis for the 'A' rating currently assigned to the debt issued by American Water and loaned internally to MAWC.

Q. For the debt shown on MAWC's balance sheet, what is the most recent debt issuance that was issued independently by MAWC?

A. The most recent debt issuance outstanding on MAWC's books that was issued independently by MAWC was on the December 20, 2006. This debt issuance was in the amount of $57.48 million.

Q. How much of the debt shown on MAWC's books was issued independently by MAWC?

A. Less than 20%. Based on the information MAWC provided to Staff in response to Staff Data Request No. 187, Staff could identify approximately $81 million of the $470 million of debt as MAWC independent debt issuances.

Q. Does this information support Dr. Morin's position that MAWC's cost of capital should be determined based on a "Stand-Alone" approach?

A. No. MAWC is not financially managed as a stand-alone entity and, in fact, it received 80% of its debt financing from AWCC, which issues debt to third parties on behalf of all of its subsidiaries. Dr. Morin's generic position is not applicable to MAWC.

Q. If MAWC is not issuing its own debt, then does it need to manage its financial risk, i.e. capital structure, to appease potential debt investors?

A. No. Because MAWC is not issuing its own debt, no debt investors are evaluating MAWC's stand-alone financial risk for purposes of determining a required return on debt investments. Consequently, MAWC's capital structure appears to only be consequential for ratemaking purposes.

Q. Does Missouri have any utilities that have historically issued all of their own debt?

A. Yes. This has typically been the case for Ameren Missouri.

Q. Has Staff recommended the use of the subsidiary capital structure in those cases?

A. Yes. Although Staff has expressed some concerns about Ameren's tendency to manage its liquidity on a consolidated basis, Staff has recommended the use of Ameren Missouri's subsidiary capital structure because, at least historically, Ameren Missouri has issued all of its own long-term debt. Consequently, Staff reviews and analyzes the specifics of each case before deciding whether a subsidiary's or consolidated parent company's capital structure is more appropriate.

Q. Please describe MAWC's financing arrangement with AWCC.

A. As stated in Paragraph 13 of Missouri-American's application filed in Case No. WF-2002-1096:

> Applicant [MAWC] proposes to implement some or all of the long-term debt portion of its financing program primarily through an affiliate, American Water Capital Corp. ("AWCC"). AWCC is a wholly-owned subsidiary of American Water Works Company, Inc., ("AWW") established for the purpose of providing

> financial services to AWW and its water and wastewater utility subsidiaries (including Applicant) by pooling the financing requirements of such companies (the "Participants"), thereby creating larger and more cost efficient debt issues at more attractive interest rates and lower transaction costs than would otherwise be available.

The Application goes on further to state in Paragraph 14:

> In the past, Applicant, and its constituent predecessors in interest, provided for debt financing needs primarily through short-term bank borrowings and the sale by private placement of long-term bonds issued pursuant to mortgages on plant and property in this State including the Indenture of Mortgage and, when available, tax exempt bond issues. Changes in financial markets and federal securities regulation have made the public securities market an attractive alternative to the traditional, secured, privately placed bonds and bank borrowings upon which Applicant has traditionally relied. However, borrowers can derive the benefits of the public market only if the amounts they borrow are large enough, and their credit rating high enough, to meet that market's significant entry level requirements. Standing alone, Applicant does not have the borrowing requirements large enough to finance in the public markets. However, by financing through AWCC, Applicant and its sister companies in other states have sufficient borrowing power to finance in the public market and thereby obtain the advantageous terms available therein.

Paragraph 15 goes on further to state:

> Generally, each year the Participants provide AWCC with an estimate of the borrowing requirements which they propose to finance through AWCC for the coming year and for one (1) to three (3) years in advance. On the basis of this information, AWCC arranges borrowing commitments and programs to provide the funds necessary to meet these requirements. All long-term debt incurred by AWCC and the corresponding long-term indebtedness of each Participant will be match-funded. That is to say, AWCC borrows long term funds only to meet specific borrowing needs of one or more participants.

Q. How does Standard & Poor's (S&P) evaluate the creditworthiness of American Water and MAWC?

A. S&P does not issue a credit rating for MAWC, but it does issue a credit rating on American Water. The credit analysis performed by S&P is based on American Water's consolidated credit risk profile, which consists primarily of regulated water and sewer subsidiaries, but also includes some non-regulated operations. If S&P did assign a credit rating to MAWC, it would be based on the consolidated operations of American Water. As long as the risk associated with the consolidated operations is consistent with MAWC's risk, then it is appropriate to not only use the consolidated capital structure, but also the cost of capital associated with this capital structure for ratemaking purposes.

Q. Does the consolidation of financing needs through AWCC make MAWC's capital structure inappropriate for purposes of determining a fair and reasonable allowed ROR for MAWC?

A. Yes, because AWCC is more or less acting like the treasury for American Water, the inflows and outflows of funds at AWCC become commingled with those funds that are being used for all sorts of purposes by American Water and its subsidiaries.

For example, American Water receives debt from AWCC just as its subsidiaries do. American Water uses this debt to make equity contributions into its subsidiaries. As such, these transactions result in the appearance of less leveraged capital structures for the subsidiaries.

Alternatively, American Water's subsidiaries could have received this capital by executing internal loan documents with AWCC. If American Water had infused the capital in the subsidiaries in this manner, then the subsidiary capital structures would be more

consistent with the amount of financial risk that American Water's subsidiaries could optimally incur. Because American Water's capital structure directly affects the cost of capital that is available to its subsidiaries in that this is a market-driven capital structure, it is unlikely that American Water would manage this capital structure in an imprudent manner, whether it is with too much leverage or not enough. Consequently, the use of the consolidated capital structure for ratemaking purposes is most likely to produce a ROR that is consistent with the cost of capital associated with MAWC's risk profile.

Q. How does AWCC determine how much it will charge on the loans it makes to MAWC?

A. Before 2011, it was Staff's understanding that any of the debt financing provided to MAWC from AWCC was based on the same interest rate AWCC paid to third-party debt investors. However, during 2011 and 2012, MAWC received debt (in 13 separate issuances) from AWCC in which the rate charged was based on AWCC's own assessment of how much this debt would cost if it were issued to third-party debt investors. Staff is not certain if the debt proceeds provided to MAWC were from a higher or lower cost debt issuance or some type of blend of financing held at American Water and/or AWCC. In my professional opinion, it is this type of situation that makes it even more convincing that the Commission should adopt American Water's consolidated capital structure and cost of debt for purposes of setting MAWC's allowed rate of return.

Q. What other reasons support the use of American Water's consolidated capital structure rather than MAWC's capital structure?

A. American Water's operations are largely confined to regulated water utility operations. According to S&P's May 7, 2015, research update in which it raised

American Water and its subsidiaries ratings to 'A' from 'A-', based on Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA), American Water's operations are approximately 95% regulated and 5% unregulated. S&P assigned American Water an "excellent" business risk profile based in large part on the stability of its regulated operations. If S&P believed American Water had a significant amount of riskier non-regulated operations, then this would most likely result in a lower business risk profile being assigned to American Water for purposes of assigning a corporate credit rating.

Q. Even if American Water had significant non-regulated operations, what would most likely be the impact on the capital structure to offset the higher business risk that is usually associated with non-regulated operations?

A. If American Water had higher-risk, non-regulated business ventures, then commonly understood financial theory dictates the need for more common equity in order to maintain a certain credit rating versus a company that does not have higher-risk, non-regulated business ventures. Therefore, utilizing American Water's consolidated capital structure for ratemaking purposes in this case is appropriate because even though American Water's non-regulated operations are limited, the inclusion of these non-regulated operations would require American Water to maintain a higher level of common equity than if American Water's operations were confined to regulated water and sewer utility operations.

Q. How many state jurisdictions regulate American Water's utility operations?

A. According to American Water's December 31, 2014, SEC Form 10-K Filing, it has regulated water utility subsidiaries in 16 states.

Q. Did Staff request information from MAWC regarding whether these other states adopted a capital structure based on the subsidiary's balance sheet or the consolidated parent company's balance sheet for purposes of setting an allowed ROR?

A. Yes. Staff issued DR 194.2 to request information about American Water's other jurisdictions' adopted capital structures, but the Company objected to this data request.

Q. Has Staff attempted to research the other states capital structures through its own resources?

A. Yes, but this is a time consuming task. While Staff has discovered that some states have used a subsidiary-specific capital structure, Staff has also discovered that some states have adopted American Water's capital structure or took into consideration the parent-company debt costs when determining the allowed rate of return. Staff will update the Commission on its findings of its research in its surrebuttal testimony.

Q. What is the premise of Mr. Gorman's recommended ratemaking capital structure?

A. Mr. Gorman maintains that MAWC's estimated per books subsidiary capital structure as of January 31, 2016, is too heavily weighted with common equity. Therefore, he recommends the use of MAWC's per books subsidiary capital structure agreed to in the last rate case for purposes of setting the allowed ROR for ISRS charges.

Q. Do you agree the use of MAWC's capital structure as of January 31, 2016, will result in a higher revenue requirement than necessary?

A. Yes. Staff has cited evidence that American Water's credit rating is based on the consolidated business risk and financial risk of all of its operations. Consequently, the cost of the debt issued by AWCC is based on the financial risk associated with

American Water's more leveraged capital structure. If American Water maintained a capital structure more consistent with MAWC's capital structure, then American Water would have less financial risk and therefore, AWCC could issue debt at a lower cost. Not only would the debt cost be lower, but the cost of equity would be lower as well. If the Commission were to adopt MAWC's more equity rich capital structure, then Staff recommends the Commission adopt a lower allowed ROE than the 9.25% recommended by Staff.

Q. What is the difference between MAWC's common equity ratio and that of American Water?

A. It's approximately 5% different or 500 basis points. Staff's capital structure recommendation consists of approximately 47% equity, whereas MAWC's common equity ratio is 52.37%.

Q. How much should the allowed ROE be lowered if the Commission adopts MAWC's higher common equity ratio?

A. Approximately 50 to 55 basis points. Dr. Morin provides testimony that approximates an ROE change of about 10 basis points for each 1% increase or decrease in the common equity ratio.[5] Dr. Morin's quantification of the cost of equity difference is corroborated by a Duff & Phelps' cost of capital analysis on American Water, which Staff cited in MAWC's 2010 rate case, Case No. WR-2010-0131.

Q. If the Commission adopted Mr. Gorman's recommended common equity ratio, would your proposed allowed ROE need to be adjusted?

A. Yes. Based on the aforementioned information, the allowed ROE should be approximately 35 basis points lower because Mr. Gorman's recommended common equity ratio is slightly over 350 basis points higher than Staff's recommendation.

[5] *Id.*, p .67. l. 1 through p. 68, l. 6.

Q. Did you indicate that if American Water had maintained a higher equity ratio, this would also allow for a lower cost of debt?

A. Yes. Because American Water would likely have a better credit rating due to a less leveraged capital structure, it would also have lower debt costs. Staff recommends the Commission lower the debt costs by the same amount as the equity costs if a more equity rich capital structure is adopted.

Q. Why are all of these adjustments needed if the Commission adopts a capital structure other than American Water's?

A. Because MAWC's per books capital structure is not market-tested. The only market capital costs that are known and at least somewhat measureable are those that are the result of investors evaluating the business and financial risk of American Water, which owns regulated water and sewer utility subsidiaries. Therefore, this is an appropriate proxy for the capital costs that MAWC incurs.

PROXY GROUPS

Q. Does Dr. Morin's water utility proxy group contain any companies that are not comparable to MAWC's regulated water and sewer utility operations?

A. Yes. Dr. Morin should have excluded the Consolidated Water Company from his water utility proxy group. Investors clearly recognize that Consolidated Water Company's business risk profile is much different from those of regulated water distribution utility companies in the United States. Value Line indicated the following in a July 17, 2015, report when it described Consolidated Water's operations:

> **Consolidated Water is very different from the other companies in this industry [Water Utility Industry].** (emphasis in original) Of the nine water utilities we

> follow, this company's future is heavily tied to nonregulated businesses. Therefore, the upside is much higher, but so is the risk.[6]

Not only are Consolidated Water's business operations significantly different than a traditional water distribution utility in the United States, but its headquarters and operations are based in the Cayman Islands. Because of its location, its business operations include developing and operating seawater desalination plants. Clearly, this company should not be included in a water utility proxy group used to estimate MAWC's cost of common equity.

Q. How did Mr. Gorman go about selecting his proxy groups?

A. Mr. Gorman adopted Dr. Morin's water utility proxy group, but appropriately eliminated Consolidated Water Company. Mr. Gorman also developed a gas utility proxy group that he felt would assist him in assessing the COE for regulated utility companies.

Q. Do you have a fundamental problem with Mr. Gorman's use of gas distribution utilities to assist with estimating the COE for MAWC's water utility operations?

A. No, but it is important to carefully analyze the financial and market data used to evaluate each industry's implied COE in order to understand if any of the implied differences are logical.

Q. What do you mean?

A. For example, it is fairly widely recognized that natural gas distribution companies tend to offer a higher dividend yield than water utility companies. Much of this can be attributed to higher expected growth in rate base for water utilities, but a portion may also be due to a lower COE. It may be hard to quantify this attribution, but it is at least important to understand it.

[6] Value Line Investment Survey, July 17, 2015.

Q. Did you compare and contrast the electric and water industries in the Staff Report?

A. Yes. I compared and contrasted these segments of the regulated utility industry to help the Commission assess whether its recent allowed ROEs for Missouri's electric utilities can be considered fair and reasonable for MAWC. Although the COE for utilities should not be that much different for the various subsectors within the utility sector, as Staff discovered when comparing the water utility industry to the electric utility industry, there are some notable differences in valuation ratios and dividend yields for the various subsectors of the utility industry. For example, just as with electric utility companies, natural gas distribution utilities tend to have higher dividend yields and lower price-to-earnings (P/E) ratios than water utility companies. Staff will discuss this information in more detail later in this testimony. However, because natural gas distribution companies tend to have lower allowed ROEs than electric utilities, this supports the Commission authorizing a lower allowed ROE for MAWC as compared to Ameren Missouri and KCPL.

Q. Do all of the companies in Mr. Gorman's gas utility proxy group have operations consistent with the business risk profile of a natural gas distribution utility?

A. No. Staff objects to the inclusion of UGI Corporation. The majority of income for UGI Corporation comes from its propane subsidiary, AmeriGas Propane. Consequently, this company is inappropriate for purposes of developing a natural gas distribution proxy group.

COST OF EQUITY ESTIMATES OF EACH WITNESS SINCE THE FALL OF 2014

Q. What is the main issue the Commission needs to consider when determining a fair and reasonable allowed ROE for MAWC?

A. Whether the allowed ROE for MAWC should be significantly different from the ROEs recently allowed Ameren Missouri and KCPL. Unfortunately, neither witness addresses this issue in their rate of return testimonies.

Q. What information from each witness have you reviewed to assist the Commission with this determination?

A. Staff issued a data request to each witness for copies of all testimonies, schedules and workpapers filed since the fall of 2014. Dr. Morin provided copies of six testimonies he had filed since the fall of 2014. Although Staff had requested an electronic copy of schedules and workpapers, Dr. Morin did not provide this information. Mr. Gorman provided a list of testimonies he had filed since the fall of 2014 and requested Staff specify which testimonies and accompanying schedules and workpapers it would like to review. Staff requested copies of Mr. Gorman's most recent three testimonies and schedules to determine if his recommendations have changed much since the fall of 2014 when he filed testimony in the Ameren Missouri rate case.

Q. Do Dr. Morin's testimonies imply there has been a significant change in the utility industries' COE since the fall of 2014?

A. No. Staff found two of Dr. Morin's testimonies to be particularly helpful for purposes of evaluating whether Dr. Morin believes there has been a significant change in the COE since 2014. Dr. Morin filed testimony in Ohio in the fall of 2014 and the fall of 2015. In both cases, the midpoint of Dr. Morin's COE estimates was 10.3%, which he claimed confirmed the reasonableness of a 9.84% ROE the Commission allowed for Duke Energy of Ohio's Distribution Capital Investment Rider ("DCI").

Q. Had Dr. Morin filed any testimony since the fall of 2014 for the water utility industry?

A. Not that Staff is aware of since he did not provide any water industry testimony.

Q. Do Mr. Gorman's testimonies imply there has been a significant change in the utility industries' cost of equity since the fall of 2014?

A. No. Mr. Gorman filed ROR testimony for two electric rate cases recently. Mr. Gorman recommended an allowed ROE of 9.3% for Montana-Dakota Utilities Company in testimony he filed on November 20, 2015. Mr. Gorman recommended the same allowed ROE of 9.3% for El Paso Electric Company in testimony he filed on December 11, 2015. In the recent Ameren Missouri rate case, Case No. ER-2014-0258, Mr. Gorman had also recommended an allowed ROE of 9.30%. Consequently, capital market conditions have not caused Mr. Gorman to change his recommendation for an electric utility allowed ROE since the fall of 2014.

Q. Do Mr. Gorman's recommendations imply there is a significant difference in the cost of capital between electric and water utilities?

A. Yes. While I did not review any other testimonies Mr. Gorman sponsored on behalf of a water utility other than the testimony he sponsored in this case, based purely on his recommendation in this case it appears Mr. Gorman believes water utilities should have an allowed ROE that is 30 basis points lower than his electric utility recommendations.

Q. Has Mr. Gorman provided any allowed ROE recommendations for gas utilities recently?

A. Yes. On October 16, 2015, Mr. Gorman filed testimony in Oregon for a gas utility rate case filed by Avista Corporation, dba Avista Utilities ("Avista"). In that rate case, Mr. Gorman recommended an allowed ROE of 9.30% for Avista. This is noteworthy considering Mr. Gorman also used a gas distribution proxy group in this rate case to determine a fair and reasonable allowed ROE for MAWC.

PROBLEMS WITH ABSOLUTE VALUE OF EACH WITNESS' CURRENT COST OF EQUITY ESTIMATES

Dr. Morin

Q. What are some of the most glaring issues that illustrate why Dr. Morin's COE estimates are extremely overstated?

A. Dr. Morin's DCF COE estimates are extremely overstated due to his overly simplistic and unrealistic assumption that water utility stock prices can grow into perpetuity at a rate of 6.2% to 7.2%. Dr. Morin claims that he used these growth rates because research has shown that stock prices are more influenced by analysts' projections rather than historical growth rates. While I accept that stock prices are influenced by analysts' projections, this does not translate into proof that investors use equity analysts' projected 5-year CAGR in EPS as their constant and/or perpetual growth rate in a DCF analysis. It is simply illogical and inconsistent with the basic characteristics of utility stocks to conclude that investors expect over 2/3 of their returns in a water utility stock to come from capital gains as compared to dividends.

Q. Have you cited proof in past rate cases that equity analysts simply don't use growth rates this high when determining a reasonable price to pay for a water utility stock?

A. Yes. I have cited this information frequently in rate cases and specifically MAWC's rate case in 2010, Case No. WR-2010-0131. This information shows that equity

analysts consistently use constant and/or perpetual growth rates in the range of 4% to 5% to determine a reasonable price to pay for water utility stocks. The constant/perpetual growth rate is applied after an initial term of anywhere from 5 years to 8 years and then a constant growth rate in the 4% to 5% range is applied.

Q. Is there a means by which to capture such growth rate differentials in estimating the COE?

A. Yes, through the use of a multi-stage DCF. Staff and Mr. Gorman used this version of the DCF. The COE estimates from using such methods with rational inputs are much more in line with a reasonable required return in today's capital and economic environment.

Q. Why are Dr. Morin's COE estimates using his CAPM and risk premium methodologies so overstated?

A. There are several reasons for this, but I will list and explain the primary reasons these results are unreasonably high.

First, Dr. Morin uses a forecasted risk-free rate that bears no relationship to the current cost of capital. Staff has consistently refuted the notion that investors use a forecasted interest rate to estimate the COE because current interest rates already consider expectations of future interest rates. An investor would not buy a 30-year Treasury bond at yields of approximately 3%[7] if the investor thought 30-year Treasury bonds would trade a yield-to-maturity of 4.4% in the near future, the risk-free rate Dr. Morin uses in his CAPM analyses and his risk premium analyses.

Q. How did Dr. Morin develop the 4.4% rate?

[7] Approximately 3% during the second half of 2015, but rapidly falling at the time Staff prepared this testimony.

A. Dr. Morin averaged projected 30-year Treasury rates over the next four years from two sources, Value Line and Global Insight. These sources had an average annual projected yield ranging from 3.8% in 2016 to 4.9% in 2019. The average of the eight data points between the two sources was 4.4%.

Q. Is it logical to use projected interest rates at all, let alone four years from now, to estimate the COE as Dr. Morin does?

A. No. Using a projected interest rate in a CAPM analysis would be similar to using projected stock prices in a DCF analysis because the analyst believes the current dividend yield will be higher or lower in the future. The fact of the matter is both current bond prices and stock prices already reflect investors' expectations of future interest rates, whether they are expected to increase or decrease.

Q. Can you provide an example of why using projected interest rates violates the basic tenets of finance and risk arbitrage?

A. Yes. The current yield on U.S. Treasury bonds reflects investors' expectations of the interest rate environment for the foreseeable future. If investors believed that they could achieve higher yields in the future, then they would not buy long-term bonds today, because they would experience a capital loss when interest rates increase. If an investor purchased a newly issued $1,000, 30-year U.S. Treasury bond today at a coupon rate of 3%, this would entitle the investor to semiannual coupon payments of $15 for the next 30 years and a return of the $1,000 investment at maturity. If these payments are discounted at the current required rate of 3%, then the present value of this stream of payments is exactly equal to the $1,000 initial investment. However, if investors expected the 30-year T-bond rate to increase to 4.4% as Dr. Morin suggests in his CAPM analysis, then the investor that

purchased the 3% bond today would see the value of their $1,000 bond investment decline to $771.88 next year. While it is possible that some investors may be strong enough in their convictions to short long-term treasury bonds because they expect interest rates to increase by this much, it is obvious that the consensus of investors, i.e., the market, are not doing so, otherwise the prices of bonds would have already dropped to levels that would push interest rates up to this higher projected level.

Q. If utility stock investors expected long-term interest rates to increase to these levels in the near future, would they be rational in their decision to purchase utility stocks at their current valuation levels?

A. No. Investors purchasing utility stocks at current higher p/e ratios would have to knowingly be buying utility stocks with the expectation that they will experience a loss in the value of their investments. Unless an investor thinks they can time the market and sell his/her investment in a utility stock before interest rates increase, then he/she has accepted this risk and is willing to incur this risk due to the current low long-term interest rate environment.

Q. What else does Dr. Morin do to his CAPM and risk premium analysis that inflates his cost of equity estimates beyond that of a reasonable estimate?

A. He uses a market risk premium that is not consistent with investors' capital market expectations. Dr. Morin claims that investors' currently require a risk premium of 7.3% over risk-free rates to invest in the market, e.g. the S&P 500.

Q. What is a typical market risk premium used by investors?

A. Around 5%, but certainly not 7%.

Q. What information do you have to support your position?

A. JP Morgan Asset Management publishes expected capital market returns on an annual basis to assist portfolio managers. As of September 30, 2015, JP Morgan Asset Management projects long-term returns on the market to be approximately 7.0%.[8] This compares to the Dr. Morin's assumed long-term capital market returns of approximately 12%. JP Morgan Asset Management more specifically assumes a market risk premium of approximately 4% based on the current risk-free rate of 3%, again calling into question Dr. Morin's position that investors use a projected interest rate to estimate an expected return.[9]

Additionally, a recognized authority in estimating the cost of capital, Duff & Phelps, recommends the use of an equity risk premium of 5.0% applied to a normalized risk-free rate of 4.0% in its 2015 edition of the "Valuation Handbook: *Guide to Cost of Capital.*"[10] Consequently, not only is the market risk premium lower than that assumed by Dr. Morin, but the risk-free rate to which the risk premium is applied is lower. Based on Duff & Phelps' risk-free rate and market risk premium, this implies an expected market return of 9% as compared to Dr. Morin's assumption of approximately 12%.

Q. Does Duff & Phelps use of a normalized risk-free rate of 4.0% support Dr. Morin's use of a projected risk-free rate of 4.4%?

A. No. The key difference between Dr. Morin's approach and that of Duff & Phelps is Duff & Phelps adjusts its risk-free rate to an equilibrium rate and adds a reasonable risk premium to this rate. Dr. Morin does not use an equilibrium rate. He just takes higher projected interest rates and assumes these are more normal than current lower interest rates.

[8] https://am.jpmorgan.com/gi/getdoc/1383271691113.
[9] *Id.*
[10] 2015 Valuation Handbook: Guide to Cost of Capital, Duff & Phelps, 2015, p. 3-33.

Q. Do you have any concerns about Dr. Morin's position that a historical *arithmetic* mean spread in stock returns compared to bond returns is a better measure of investors' expected risk premium as opposed to the historical *geometric* mean?

A. Yes. Dr. Morin claims it is appropriate to use the annual *arithmetic* mean of the spread between stock returns and bond returns because investors' return requirements are impacted by the annual volatility in earnings.[11] While investors definitely follow earnings releases and performance, this is not the basis for investors' required return over a holding period. Dr. Morin's position assumes investors buy and sell stock every year and that the stock price moves proportionately with earnings volatility. In my professional opinion, this behavior does not define the buy and hold investors that typically purchase utility stock, but this does not mean that there are not investors that do attempt to profit from this volatility.

Q. What methodology does the curriculum for the Chartered Financial Analyst (CFA) Program emphasize for purposes of estimating the cost of capital for long-term investments, such as common stock?

A. The curriculum for the CFA Program emphasizes *geometric* risk premiums for purposes of estimating the cost of capital for long-term investments. In an *Analysis of Equity Investments: Valuation*, 2002, by John D. Stowe, Thomas R. Robinson, Jerald E. Pinto and Dennis W. McLeavey, the authors state the following:

> In taking a historical approach, we face a choice between using arithmetic mean return (typically, the average of one-year rates of return) and using the geometric mean return (the compound rate of growth of the index over the study period). The arithmetic mean more accurately measures average one-period returns; the geometric mean more accurately measures multiperiod growth. The dilemma is that the CAPM (as well as the APT) is a single-period model, suggesting

[11] Morin Direct, p. 40, ll. 9-12.

> the use of the arithmetic mean; but common stock investment often has a long time horizon, and valuation involves discounting cash flows over many periods, suggesting the use of geometric mean…
>
> …Although the debate is inconclusive, this book uses geometric means, not only for the previously given reasons but also because geometric means produce estimates of the equity risk premium that are more consistent with the predictions of economic theory.

Because a fundamental principle underlying the DCF formula used to estimate the cost of equity in utility rate case proceedings assumes an indefinite holding period, the use of geometric means is consistent with the fundamentals of utility stock valuation. Consequently, to the extent historical spreads between stock returns and bond returns are used as a proxy for estimating the required risk premium, the use of a geometric average is more appropriate.

Q. Although there is debate on how to average historical spreads to estimate a risk premium, what is the most important consideration for purposes of determining if the risk premium suggested is reliable?

A. Regardless of the mechanical calculation of historical return spreads, it is important for the analyst to evaluate what investors are likely using in the current market environment. The risk premium being used is determined by the consensus of investors who are investing in the stock market. Staff frequently reviews investor reports and/or utility companies' own internal financial analyses to determine what investors and their subject companies are using to make investment decisions.

Q. Has American Water performed any such analysis recently?

A. American Water did not perform such an analysis directly, but it hired Duff & Phelps to do so as of November 30, 2011. At that time, Duff & Phelps provided the

following explanation as to why it believed a ** ___ ** market risk premium was appropriate:

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Although four years have passed since the above analysis was done, Duff & Phelps would likely use a lower risk premium now due to the fact that as of 2011, the US economy was emerging from a deep recession and forward P/E ratios on the S&P 500 were approximately 12x to 13x as compared to around 15x to 16x now.[12]

Q. Does Dr. Morin attempt to estimate an implied equity risk premium by analyzing the S&P 500 index?

[12] John Butters, "CY 2016: S&P 500 Preview," FactSet Market Insight, January 6, 2016.

A. Yes. He provides his estimate of the implied equity risk premium on page 42 of his direct testimony. Dr. Morin performs a crude DCF analysis on the stock market by adding a projected CAGR in EPS of 10% over the next five years to a dividend yield of 1.93%. Dr. Morin concludes that adding these two figures represents investors' expected return on the broader market of 11.93%. If only investing were that simple and easy. It is not.

Q. Is it rational to assume that broader US capital markets will achieve a CAGR of 10% per year into perpetuity?

A. No. Historical data show that over the long-term (1872-2008), the compound average nominal earnings growth rate for the U.S. markets has been approximately 3.5%.[13]

Additionally, an overwhelming amount of financial research shows that earnings growth of broader markets cannot be any higher than GDP growth for the economy in which they operate.[14],[15] For developed markets such as the United States, this growth rate should firmly be in the 2 to 3% range on a real basis and 4 to 5% on a nominal basis.

Consequently, a terminal/perpetual growth rate for the broader markets, let alone utilities, of any higher than 5% is not rational and/or reasonable.

Q. Is it possible to determine a market-implied cost of equity for the broader markets that considers near-term higher growth rate projections?

A. Yes. This can easily be captured by performing a multi-stage DCF analysis on the S&P 500 which will capture near-term higher growth rates in EPS and allow the DCF to trend to a constant growth rate, consistent with a broader economic growth rate. In fact,

[13] CFA Institute Curriculum, "Investments: Principles of Portfolio and Equity Analysis," 2011, pp.493-494.
[14] In fact, William J. Bernstein and Robert D. Arnott discovered that due to dilution earnings growth was less than GDP growth.
[15] William J. Bernstein and Robert D. Arnott, "Earnings Growth: The Two Percent Dilution," Financial Analysts Journal, September/October 2003, pp. 47-55.

the CFA Program curriculum suggests this as a method to estimate the market implied return on a broad index such as the S&P 500. Specifically, it states:

> Analysts have frequently used the Gordon (constant) growth model form of the dividend discount model [same as the constant-growth DCF in utility ratemaking terms], solved for the required rate of return, to formulate the long-term expected return of equity markets. The Gordon growth model assumes that there is a long-term trend in dividends and corporate earnings, which is a reasonable approximation for many developed country economies…
>
> …The quantity *g* can be estimated most simply as the growth rate in nominal gross domestic product (nominal GDP), a money measure of the goods and services produced within a country's borders. Nominal GDP can be estimated as the sum of the estimated real growth rate in GDP plus the expected long-run inflation rate. A more advanced analysis can take account of any perceived differences between the expected growth of the overall economy and that of the constituent companies of the particular equity index that the analyst has chosen to represent equities. The analyst can use
>
> Earnings growth rate = GDP growth rate + Excess corporate growth (for the index companies)
>
> where the term excess corporate growth may be positive or negative depending on whether the sectoral composition of the index companies is viewed as higher or lower growth than the overall economy. **If the analyst has chosen a broad-based equity index, the excess corporate growth adjustment, if any, should be small . . .** (emphasis added)

Staff performed a multi-stage DCF analysis on the S&P 500, which assumes the US economy will grow at a rate of approximately 4.5% in the long-run. While this is at the high-end of most economic forecasts, it still is within reason for purposes of testing the reasonableness of Dr. Morin's assumptions. Staff's analysis shows that a more reasonable expected return for the S&P 500 is approximately 8.25% (see Schedule DM-r1), which is

much more consistent with JP Morgan's Asset Management's expected return of approximately 7.0% for the United States' large cap equity markets.

Q. Does Dr. Morin's position regarding the use of arithmetic average spreads contradict any other part of his testimony?

A. Yes. Dr. Morin indicates that investors will require a higher return if annual earnings are more volatile even if there is a fairly high probability that the ending value will be consistent with the expected compounded annual return over several years. However, Dr. Morin claims that no adjustment to the allowed ROE should be made if the Commission were to allow a Revenue Stability Mechanism (RSM) that it claims will allow it to more closely earn its allowed ROE on an annual basis. Dr. Morin's position regarding how to estimate the market risk premium is clearly at odds with his position that the Commission should not lower MAWC's allowed ROE if the Commission allows a RSM.

Q. What primary concerns do you have with Dr. Morin's risk premium estimate determined by calculating the arithmetic mean between annual returns on the S&P Utility Index and 20-year US Treasury bonds?

A. The utility companies in the S&P 500 Index are a diverse group of companies that are not limited to regulated utility companies. However, considering that many of the utilities that comprise the S&P Utility Index are electric utilities, this implies that Dr. Morin considers electric and water utilities as comparable. Therefore, this supports the Commission not allowing an ROE any higher than 9.5% for MAWC.

The other primary concern I have is that Dr. Morin's risk premium estimate is based on an arithmetic average of annual returns. As I discussed extensively when addressing Dr. Morin's CAPM analysis, an average of annual return differences does not represent the

risk premium investors would require to invest over longer periods. Arithmetic returns can be converted to geometric returns by use of a fairly straightforward formula.[16] After Staff converted the arithmetic returns to geometric returns, the historical risk premium of S&P utility returns over 20-year US Treasury bond returns is approximately 4%. Adding this risk premium to the current 20-year US Treasury yield of approximately 2.6% results in a cost of equity of 6.6%, which is much more in line with rational expectations for utility stock returns.

Q. Does the S&P 500 Utility Index include any water companies?

A. No. Based on the Standard GICS Codes assigned to companies in the S&P 500 Utilities Index, the S&P Utility Index is approximately 58% electric utilities, 39% multi-utilities and the rest are gas utilities and independent power producers and energy traders.[17]

Q. Do you have any concerns with Dr. Morin's allowed ROE risk premium analyses?

A. Yes. His risk premium approach is not based on market-implied costs. It is commonly understood in the investment community that allowed ROEs are not the same as the COE. There is no doubt that investors expect commissions to continue to allow ROEs above the COE (at least in lower interest rate environments), but allowed ROEs are not synonymous with the market-implied COE. Consequently, I think it is more appropriate to characterize Dr. Morin's risk premium studies as a "bond yield plus allowed ROE premium analysis."

[16] $R_g = R_A - (\sigma^2/2)$.
[17] https://www.google.com/?gws_rd=ssl#q=s%26p+500+gics+scorecard.

Dr. Morin's analysis compounds the circularity involved in using allowed ROEs to estimate the COE by suggesting that the COE should be adjusted due to his observation that allowed ROEs are negatively correlated with changes in utility bond yields. While it is safe to conclude that risk premiums are not constant over time, the use of actual or allowed ROE data to interpret the market's required risk premium is of questionable value. For example, Eugene Fama and Kenneth French concluded that *earned* ROEs over the period of 1950 through 2000 were not consistent with *required* ROEs over the same period.[18] Fama and French arrived at this conclusion by using the DCF method to compare the cost of equity to the return on equity over the same period. The Fama and French study also helps explain what has happened with regulated utility stocks in recent years.

Investors in regulated utility stocks have benefited from a decline in interest rates, just as investors in bonds benefited from a decline in interest rates (increase in bond prices). Because of the higher value placed on bonds and dividend-paying stocks, such as regulated utilities, the issuers of these securities now realize much lower costs when they need to raise capital. In the instance of bonds, it is easy to measure this lower cost because the lower rate is indicated directly in the lower coupon rates attached to the bonds. However, in the instance of stock, it must be measured by judgment, but considering the bond-like characteristics of regulated utility stocks, it really should be fairly intuitive that the COE for regulated utility companies is in the 6 to 7% range.

Mr. Gorman

Q What allowed ROE does Mr. Gorman recommend?

A. Nine percent.

[18] Eugene F. Fama and Kenneth R. French, "The Equity Premium," *The Journal of Finance*, (April 2002).

Q. What is the basis for Mr. Gorman's ROE recommendation?

A. He indicates that this is based on his estimate of the water utility industries' COE. Although I consider a 9% allowed ROE to be fair and reasonable for a water utility, this is not consistent with the water utility industries' COE.

Q. Why do you believe Mr. Gorman's final COE estimate of 9% is higher than the true COE for the water utility industry?

A. Mr. Gorman consistently uses higher-end model results and model inputs to allow for a higher final COE estimate. It is fairly clear from reviewing some of his unadjusted and rational COE model results that the COE for the water utility industry is easily in the 7% range.[19] Although Mr. Gorman's various DCF methods produce results in the 8 to 9% range, most of these results are from his gas utility proxy group and they are also using perpetual growth rates higher than the long-term projected sustainable growth rate in the economy of approximately 4.5%.

Mr. Gorman's multi-stage DCF analyses on his water utility proxy group, in which he uses a much more reasonable perpetual growth rate of approximately 4.4%, produces COE estimates for his water utility proxy group in the 7% range. Only one out of the six DCF results for his water utility proxy group implies a COE of 9%.

Q. What allowed this result to be higher?

A. The COE estimate above 9% is premised on the assumption that dividends can grow in perpetuity at a rate of 6.3%, which is not rational. Considering that investors currently require a dividend yield of approximately 2.8% on water utilities, it simply isn't logical or consistent with the characteristics of utility stock investments to expect that

[19] Gorman Direct, Table 4, p. 41.

investors expect 70% of their total return from water utility investments to come from capital gains (6.3/9.1).

Q. Mr. Gorman's DCF analyses on his gas utility proxy group imply that the COE for gas utility companies is higher than it is for water utility companies. Do you believe this is a fair conclusion?

A. No. While I do not believe the COE for the two industries should be widely disparate, it is not conclusive that the COE is higher for the gas industry compared to the water utility industry. The main reason why Mr. Gorman's DCF COE estimates are higher for his gas proxy group is because he used higher perpetual growth rates for the gas industry than investors actually use. For example, while Staff has observed that equity analysts may use perpetual growth rates similar to the level of GDP for water utility stocks, it has been Staff's experience that equity analysts use perpetual growth rates lower than GDP for the gas distribution industry.

Q. Is this consistent with the dividend yield characteristics of the two industries?

A. Yes. The natural gas distribution industry typically offers higher dividend yields and lower growth rates than the water utility industry. This explains why Mr. Gorman's natural gas utility proxy group has a dividend yield of 3.39% and his water utility proxy group has a dividend yield of 2.86%.

Q. What causes Mr. Gorman's risk premium analyses to produce results higher than the water utility industries' COE?

A. First, Mr. Gorman's risk premium methodology is more properly classified as an allowed ROE to bond yield spread rather than a COE to bond yield spread. Mr. Gorman determines the spread between allowed ROEs and bond yields since 1986. While this

analysis can be very helpful to the Commission for purposes of determining a fair and reasonable ROE to allow the utility, it is erroneous to conclude that this information provides evidence on the spread between the COE and the cost of debt. As Mr. Gorman identifies, the market-to-book ratios for the utility industry have consistently been above one and at times, a very high level above one. This is evidence that allowed ROEs are higher than the COE.

Second, Mr. Gorman adds his allowed ROE risk premium estimates to projected interest rates for purposes of estimating the COE. This is akin to performing a DCF analysis on projected stock prices. Current bond prices already reflect investors' expectations about the risks of volatility and changes in interest rates.

Finally, Mr. Gorman decides to give more weight to the higher end of his allowed ROE risk premium estimates because of the low interest rate environment. This again causes his final estimates to be higher than the true COE for the water utility industry or the broader utility industry for that matter.

Q. What causes Mr. Gorman's CAPM results to be higher than the true COE for water utility companies?

A. Just as with his risk premium analyses, Mr. Gorman uses a projected 30-year Treasury bond rate of 3.8% as an input to estimate the COE. If he had appropriately used a current rate (3% or lower in recent weeks and months) which already reflects investors' expectations of future interest rate changes, his COE estimates would have been at least 80 basis points lower.

Mr. Gorman also assumes that investors expect returns on the S&P 500 to be approximately 11.4% based on the building-block method he used in which he assumes that investors expect to achieve an 8.9% real return on the market. Staff is not aware of any

institutional investors that project U.S. stock markets will achieve real returns anywhere near this level. In fact, Mr. Gorman's real return estimate for his CAPM contradicts the GDP growth rates of approximately 4.4% he used in his DCF analyses. As Staff already discussed when addressing Dr. Morin's expected market returns, which assumed a 10% CAGR into perpetuity, if one properly assumes the market will grow at a rate consistent with GDP, then expected returns on the broader market may be around 8.25%.

Q. Do you consider Mr. Gorman's recommended allowed ROE to be reasonable as compared to the Commission's recent awards in the KCPL and Ameren Missouri rate cases?

A. Yes.

Q. How can you be so sure that the COE in the capital markets is so much lower than allowed ROEs?

A. Because investors indicate so. Staff provided information in the Staff Cost of Service Report that proved that for purposes of financial reporting to investors, American Water accepted that its COE was **____ ** in 2011.[20] Certainly, use of reasonable growth rates in any DCF methodology on the utility industry supports a COE at this level.

FLOTATION COSTS

Q. Dr. Morin suggests there should be an upward adjustment to the COE to allow for costs associated with issuing common equity. Should this adjustment be made?

A. No. In past Missouri rate cases, Staff has allowed recovery of explicit costs associated with issuing common equity by the allowance for an amortization of these issuance costs over a 5-year period. This is the methodology Staff used for allowing

[20] MAWC's response to Staff Data Request No. 0191.

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The Empire District Electric Company recovery of issuance costs in their past rate cases. Consequently, to the extent there are explicit common equity issuance costs that can be reasonably assigned to MAWC, the recovery of these costs would be through an expense allowance rather than through an adjustment to ROR.

REVENUE STABLIZATION MECHANISM (RSM)

Q. If the Commission were to allow MAWC a RSM, should the allowed ROE be adjusted to consider this mechanism?

A. Yes, but the Commission should realize that quantifying an adjustment, if any, is very much a matter of judgment.

Staff has already discussed some fundamental differences in opinion it has with each of the cost of capital witnesses' views on the use of arithmetic versus geometric means for purposes of determining investors' required risk premiums. The need for any adjustment and the potential amount of the adjustment depends largely on whether investors do in fact buy and sell water utility stocks based on annual fluctuations in earnings levels. Unfortunately, Staff is not aware of studies on this matter, let alone conclusive ones.

Q. Does Dr. Morin contradict himself when he argues for the use of arithmetic averages for purposes of estimating the overall COE, but not to make an adjustment to the final allowed ROE to consider the RSM?

A. Yes. On page 40 of his direct testimony, Dr. Morin states the following:

> Where there is any annual variation (volatility) in a series of numbers, the arithmetic mean of the series, which reflects volatility, will always exceed the geometric mean, which ignores volatility. Because investors require higher expected returns to invest in a company whose earnings are volatile than one whose earnings are stable, the geometric mean is not useful in estimating the expected rate of return which investors require to make an investment.

Dr. Morin certainly emphasizes that investors require higher returns for higher annual volatility in earnings. MAWC's proposed RSM mechanism is intended to reduce the annual volatility in its realized revenue, and therefore, in it its annual earnings. Although Staff is not sure utility investors will change their return requirements drastically if a company is able to more closely earn its allowed ROE due to an RSM, it appears that Dr. Morin's own testimony argues for some consideration.

Q. Is Staff aware of any investment commentary that lends support to some consideration being given in the allowed ROE for a mechanism that decouples revenues from usage?

A. Yes. Within the last ten years, this Commission and many commissions throughout the country considered rate designs (classified as straight-fixed variable in Missouri) that decoupled gas revenue collection from gas usage. As part of Staff's research in determining whether any consideration should be given to the allowed ROE in conjunction with such proposals, Staff found that Goldman Sachs did believe such rate designs justified a lower COE used to estimate the value of gas utility stocks. In fact, Goldman Sachs believed a 40 basis point lower allowed ROE should not cause the value of the lower, more certain cash flows, to be less than the higher, less certain cash flows.[21]

Q. Do credit rating agencies tend to give considerations to revenue stabilization mechanisms when assessing the underlying business risk of a company?

A. Yes. Although rating agencies tend to look at the totality of all regulatory and company issues when assigning a business risk, a RSM would definitely be noted by a rating agency if it were assigning a rating to regulated subsidiary that was viewed as stand-alone.

[21] Staff Report: Cost of Service, Missouri Gas Energy-A Division of Southern Union Company, Case No. GR-2009-0355, August 2009, p. 36.

Q. If you had to quantify how much consideration should be given to the allowed ROE if such a mechanism is allowed, how would you propose this be done?

A. If MAWC were a stand-alone entity that issued its own debt and was rated based on its own stand-alone credit risk profile, such a mechanism may allow MAWC's credit rating to be improved by one notch. Considering the average yield spread between an 'A'-rated utility bond and a 'BBB'-rated utility bond is usually about 50 basis points, I would recommend the allowed ROE be reduced by 15 to 20 basis points to account for a possible one notch credit rating improvement.

SUMMARY AND CONCLUSIONS

Q. Please summarize the conclusions of your rebuttal testimony.

A. Dr. Morin's recommended ROE of 10.7% is not fair and reasonable considering the Commission's recent decisions in the Ameren Missouri and KCPL rate cases. While there has definitely been significant contraction in the broader stock markets, this has not impacted the cost of capital to utilities. If anything, investors are taking comfort in the safety of utilities. Utility bond yields and stock valuation levels justify the Commission authorizing an allowed ROE of 9.5% or lower for MAWC.

The Commission should reject both Mr. Gorman's and Dr. Morin's recommended capital structures because they are based on MAWC's current or past per book capital structures. As Staff has explained in detail, MAWC does not need to manage its capital structure for purposes of issuing debt or equity to third-party investors. American Water's capital structure is the most appropriate because it is managed with the purpose of maintaining a balanced capital structure that allows the company to maintain and attract capital at the most efficient cost.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Missouri-American Water Company's Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas	))))	Case No. WR-2015-0301

AFFIDAVIT OF DAVID MURRAY

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW DAVID MURRAY 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.

DAVID MURRAY

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 11th day of February, 2016.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: December 12, 2016
Commission Number: 12412070

Notary Public

MISSOURI-AMERICAN WATER COMPANY
CASE NO. WR-2015-0301

Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Standard & Poor's 500 Index

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
S&P 500	$45.40	10.48%	9.48%	8.49%	7.49%	6.49%	5.50%	4.50%	8.23%

Quarterly Dividend = $11.35

Sources:

S&P 500 Information: http://us.spindices.com/indices/equity/sp-500

GDP: Page 41 from Staff's Cost of Service Report

Footnotes:

1. Price as of February 9, 2016.