MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

REVENUE REQUIREMENT
COST OF SERVICE

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2015-0301

Jefferson City, Missouri
December 23, 2015

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

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COST OF SERVICE REPORT

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COST OF SERVICE REPORT

I. Executive Summary

Staff of the Missouri Public Service Commission (Staff) has conducted a review in Case No. WR-2015-0301 of all cost of service components (capital structure and rate of return, rate base, depreciation expense, operating revenues and expenses) which comprise Missouri-American Water Company's (MAWC) Missouri jurisdictional revenue requirement. This audit was in response to MAWC's filing made on July 31, 2015, seeking to increase its annual base rate revenues by approximately $51,028,321. MAWC is authorized to recover approximately $25,892,662 of this request through its existing Infrastructure System Replacement Surcharge (ISRS) as previously approved by this Commission in Case No. WO-2015-0211. The investment and related costs being collected through ISRS will be reflected in the overall cost of service calculation in this rate case. In addition to the ISRS revenues that it is authorized to collect, MAWC is requesting a combined water and sewer rate increase of approximately $25,135,659 annually. MAWC's $25,135,659 rate increase application represents a requested annual increase of $23,384,396 million for water revenues and $1,751,263 for sewer revenues.

Staff's recommended increase in revenue requirement is based upon an adjusted test year for the twelve months ending December 31, 2014, which includes several updates for changes in major elements of the revenue requirement through September 30, 2015. Staff's recommendation also reflects all ISRS capital investment and related costs that MAWC is authorized to recover through its current Commission approved ISRS tariff and requires that MAWC's ISRS rate be set to zero upon the effective date of rates in this case. Staff's recommended revenue requirement for MAWC is $18,648,232 at Staff's recommended return on equity (ROE) recommendation of 9.25%. Staff's recommendation includes an estimated true-up allowance of $12,303,226. Staff's recommended revenue requirement for all MAWC water operations is $17,581,527 and for all sewer operations is $1,066,705.

The impact of Staff's recommended revenue requirement for each retail rate customer class will be proposed in the Staff's rate design testimony that is to be filed on January 20, 2016. The rate design testimony contained in Section XI of this Report will provide a summary of Staff's proposed hybrid district consolidation recommendation.

Staff Expert/Witness: John P. Cassidy

II. Background of Missouri-American Water Company

A. Introduction

MAWC is a wholly owned subsidiary of American Water Works Company, Inc. ("American Water" or "AWW"), which is the largest investor-owned U.S. water and wastewater utility company. American Water is headquartered in Voorhees, New Jersey and provides a variety of services to approximately 15 million people in over 45 states and parts of Canada. As part of this overall umbrella of services, American Water provides water and sewer service in 16 states that are subject to regulation by state public utility commissions. American Water also controls American Water Works Service Company, Inc. ("Service Company") which provides consolidated and centralized functions for American Water owned subsidiaries. Staff has attached a copy of an AWW organizational chart as well as an organizational chart that summarizes AWW's current regulated operations. Please refer to Highly Confidential Schedules JPC-d1 and JPC-d2 to view a copy of these organizational charts.

B. Mergers and Acquisitions

Prior to 1993, MAWC only served water customers located in Joplin and St. Joseph, Missouri. During 1993, MAWC purchased the operating water districts located in Brunswick, Mexico, Parkville, Warrensburg and St. Charles, as well as the Parkville sewer district, formerly known collectively as Missouri Cities Water Company (MCWC), from MCWC's parent, Avatar Properties, Incorporated. The Commission approved MAWC's proposed acquisition of MCWC as part of Case No. WM-93-255 and the former MCWC's operation merged into MAWC operations effective December 31, 1994. The Jefferson City water district was purchased from United Water Company and this district was merged into MAWC's other operations effective December 31, 2001. American Water Works, Inc. purchased from National Enterprises Inc. (NEI) the former St. Louis County Water Company operations along with NEI's water operations in other states during June 1999. AWW effectively merged both the St. Louis County Water Company as a district into MAWC operations on December 31, 2001.[1]

[1] MAWC acquired the Jefferson City Water Works from United Water. The Commission approved MAWC's purchase of the Jefferson City district as part of Case No. WM-2000-222. As part of Case No. WM-2001-309, MAWC filed an application seeking permission to merge both the St. Louis County Water

As of September 30, 2015, MAWC provided water service to approximately 459,846 customers and sewer service to approximately 11,786 customers. For approximately 7,414 of the 11,786 sewer customers MAWC owns wastewater collection only facilities. For these customers, MAWC sends the wastewater to non-affiliated entities, such as the St. Louis Metropolitan Sewer District, for actual wastewater treatment. MAWC is a Missouri corporation providing water service primarily in and around the cities and villages of Branson, Brunswick, Hollister, Houston Lake, Jefferson City, Joplin, Loma Linda, Mexico, Parkville, Platte Woods, Riverside, Reeds Spring, Sedalia, St. Charles, St. Joseph, St. Louis metropolitan area, Warrensburg, Warsaw and other outlying areas in the following Missouri Counties: Barry County, Greene County, Platte County, Warren County, and Taney County Missouri. MAWC also primarily provides sewer service in and around the cities of Arnold, Branson, Cedar Hill, Gravois Mills, Jefferson City, Laurie, Parkville, Reed Springs, Sedalia, and Warsaw, and in the following Missouri Counties: Cole County, Callaway County, Camden County, Morgan County, Taney County and Warren County.

Since the time of MAWC's last rate case, Case No. WR-2011-0337, MAWC has acquired one large wastewater system (City of Arnold) and several smaller water and wastewater systems. The following chart summarizes the systems that MAWC has acquired since the time of the last rate case:

System Name	Water\ Sewer	Location	Case No.	Date Approved By Commission
Saddlebrooke	Water & Sewer	Christian Co. Taney County	WA-2012-0066 & SA-2012-0067	July 21, 2012
Meramec Sewer Co.	Sewer	Jefferson Co.	SO-2013-0260	February 28, 2013
Tri-States Utility	Water	Taney County	WO-2013-0517	August 29, 2013
Emerald Pointe Utility	Water & Sewer	Taney County	WO-2014-0113 & SO-2014-0116	March 22, 2014
Anna Meadows HOA	Water & Sewer	Lincoln County	WA-2015-0019	December 5, 2014
RMB, Inc. "Redfield"	Water	Cole County	WA-2015-0108	April 10, 2015
City of Arnold	Sewer	Jefferson Co.	SA-2015-0150	April 24, 2015
Hickory Hills	Water & Sewer	Moniteau Co.	WA-2016-0019	November 14, 2015
Benton County Sewer	Sewer	Benton County	SA-2015-0065	December 12, 2015
Jaxson Estate	Water	St. Charles Co.	WA-2016-0054	January 15, 2016

Company and the Jefferson City Water Works as new, separate districts. The Commission approved this transaction on October 7, 2001.

MAWC has indicated to the Staff that due to time constraints, lack of cost information and other factors, they do not intend to address the rates for the Hickory Hills, Benton County Sewer or Jaxson Estates acquisitions as part of this rate proceeding.

C. Annual ISRS Collection

On February 27, 2015, MAWC filed an application as part of Case No. WO-2015-0211 to adjust its water ISRS. The Commission issued an order effective on June 27, 2015, approving MAWC to collect $25,892,662 under the new ISRS surcharge. This level represents the maximum level that MAWC is allowed to collect up to the 10% threshold amount of the $258,926,620 of base revenues as determined in MAWC's most recent general rate case, as part of Case No. WR-2011-0337. On October 28, 2015, as part of Case No. WO-2016-0098, MAWC filed an application to address a required annual ISRS reconciliation process. Staff will file a recommendation in that case on December 28, 2015. As a result of this current rate case, Case No. WR-2015-0301 the ISRS rate will be reset to zero. The overall net change in rates for MAWC, as recommended in Staff's direct filing in this proceeding is the difference between Staff's revenue requirement recommendation at Staff's 9.25% return on equity and the ISRS amount already reflected in rates ($25,892,662).

D. MAWC Previous Rate Increase

MAWC last sought to change its water and sewer rates in Case No. WR-2011-0337. In its *Order Approving Non-Unanimous Stipulation and Agreement* issued in that case, the Commission approved an agreement that granted MAWC a total increase in rates of approximately $23,980,000. MAWC received a $23,255,000 annual increase in water revenues and a $725,000 annual increase in sewer revenues.

Staff Expert/Witness: John P. Cassidy

III. Test Year and True-Up Recommendation

Staff and MAWC propose a test year of the twelve months ending December 31, 2014 for Case No. WR-2015-0301. *Staff's Motion For Test Year And Consent To True-Up,* filed on December 8, 2015, requested that the Commission establish a test year ending December 31, 2014 with a true-up audit through January 31, 2016 consistent with the dates proposed by MAWC. On December 15, 2015, the Commission ordered parties to the case to

respond to Staff's motion by December 18, 2015. No party to the case filed a response to Staff's motion by that date. At the time of this direct filing the Commission had not yet issued an order to address Staff's motion with regard to establishment of the test year and true-up dates.

The test year represents the starting point for determining a utility's existing annual revenues, operating costs and net operating income. Adjustments are made to the test year results when the unadjusted amounts do not fairly represent a utility's most current, ongoing and appropriate annual level of revenues and operating costs. The purpose of a true-up is to establish a cut-off point to which major elements of a utility's revenue requirement are to be updated, beyond the test year. When ordered, true-ups involve the filing of additional sets of testimony and the scheduling of additional evidentiary hearings ordered by the Commission. Staff expects to consider actual changes for certain significant items during its true-up audit. The following list details the items that Staff intends to address as part of its true-up audit:

Rate Base

Plant-in-Service

Depreciation Reserve

Contributions in Aid of Construction (CIAC)

CIAC Reserve

Accumulated Deferred Income Taxes

Customer Advances

Materials and Supplies

Prepayments

Discontinuance of Tank Painting Tracker - Inclusion of Remaining Unamortized Balance

Pension Tracker Balance

OPEB Tracker Balance

Other Deferred Regulatory Assets and Liabilities

Rate Base for Newly Acquired Systems

Cash Working Capital

Cost of Capital[2]

Capital Structure

Cost of Debt

Cost of Preferred Stock

Revenues and Expenses

Customer and meter counts

Chemical Expense

Purchased Water Expense

Waste Disposal

Support Services

Transportation Fuel and Maintenance

Payroll & Benefits

Rate Case Expense

Uncollectibles Expense

Depreciation and Amortization

Production Maintenance Expense

Tank Painting Expense

Pension and OPEB Expense

Injuries and Damages

Property Tax Expense

Platte County Waste Treatment Contact

Revenues and Expense for Newly Acquired Systems

Actual Sludge Removal Costs

Income Taxes

As the part of the procedural schedule approved by this Commission in its *Order Adopting Procedural Schedule* issued on September 23, 2015, MAWC is required to provide all of this true-up information to the parties of this rate case by February 19, 2016.

Staff Expert/Witness: John P. Cassidy

[2] Data will be provided through December 31, 2015.

IV. Major Issues

The following are the major issues that exist between Staff and the MAWC as a result of their respective direct filings. These issues are discussed here because of their significant difference in estimated dollar value or methodology. A brief explanation for each issue follows, with an estimate of its dollar value between the positions of the Staff and Missouri-American on the issue.

Return on Equity and Capital Structure (ROE) – ($17.3 million). Staff has recommended a 9.25 percent ROE. MAWC is recommending a 10.7 percent ROE. In addition, Staff has reflected an American Water Works parent company capital structure whereas MAWC has proposed a MAWC specific capital structure. The $17.3 million revenue requirement difference was determined based upon investment that was in service at September 30, 2015. The ROE and Capital Structure issues are addressed in detail in the Section V of this Report.

Revenues – ($5.7 million). Staff is recommending an annualized total company revenue amount that is $5.7 million more than MAWC's recommendation. Staff's total revenues reflect historical averages of usages and actual customer levels that existed at September 30, 2015. MAWC's annualized revenues reflect a proposed declining customer adjustment which restates test year ending December 31, 2014 actual revenues. MAWC's annualized revenues also reflect customer levels that existed during the test year and does not take into account any customer growth that has occurred beyond the test year.

Payroll Expense – ($4.7 million). Staff has reflected the reductions in the level of employees at both MAWC and Service Company that occurred during the test year through September 30, 2015. Service Company in particular has significantly reduced headcounts through September 30, 2015. Staff factored up payroll for all wage and salary increases that will have occurred through December 31, 2015. In addition, Staff normalized the test year level of overtime costs for MAWC employees using a five-year average. Finally, Staff has disallowed a portion of salaries for those employees who regularly participate in lobbying activities. MAWC reflected the MAWC employee counts at April 8, 2015, and included salaries for all vacant positions that existed at that point in time and then factored up this payroll amount for all wage and salary increase expected through June 30, 2016. For allocated Service Company labor, MAWC reflected actual and expected changes in

employees and salary wage rates during and subsequent to the test year. Finally, MAWC normalized the test year overtime for MAWC employees using a three year average.

Incentive Compensation – Issue Value – ($2.7 million). Staff recommends a disallowance from test year expense of approximately $2.6 million in incentive compensation awards that are primarily and directly tied to earnings performance measurements. In addition, Staff recommends similar disallowance to exclude the capitalized portion of these same incentive compensation awards from rate base. Excluding these amounts from rate base reduces Staff's overall revenue requirement by approximately $83,589.

Allocation of Corporate and Joint and Common Costs – Issue Value -- ($0). MAWC proposes that all corporate and joint and common costs be allocated to the various districts in two steps. First, MAWC proposes that all small districts with less than 3,000 customers be allocated an annual amount of $20 per customer, based upon a review of a few small companies. MAWC allocated the remainder of the corporate and overhead cost to the large districts based on cost causers. Staff opposes the $20 annual allocation cap for the small districts because that approach artificially creates unfair cost subsidies between MAWC districts. Staff has instead allocated corporate and overhead costs to all districts based upon identifiable cost causers and for the sake of transparency. Staff will address this issue in depth as part of its rebuttal testimony filing scheduled on February 11, 2016.

Staff Expert/Witness: John P. Cassidy

V. Rate of Return

A. Introduction

An essential ingredient of the cost of service ratemaking formula is the rate of return (ROR), which is usually premised on the goal of allowing a utility the opportunity to recover the costs required to secure debt and equity financing. If the allowed ROR is based on the costs to acquire capital, then it is synonymous with the utility's weighted average cost of capital ("WACC"), which is calculated by multiplying each component ratio of the appropriate capital structure by its cost and then summing the results. While the proportion and cost of most components of the capital structure are a matter of record, the cost of common equity must be determined through expert analysis.

Staff's expert financial analyst, David Murray, estimated MAWC's cost of common equity by applying well-respected and widely-used methodologies to data derived from a carefully-assembled group of comparable companies, also referred to as the proxy group. Staff then compared its cost of common equity estimate for the water utility industry to its recent estimates of the cost of common equity for the electric utility industry in the recent Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri"), The Empire District Electric Company ("Empire") and Kansas City Power & Light ("KCPL") rate cases, as well as an update to the cost of common equity for the same refined electric utility proxy group,[3] to provide the Commission with a quantitative estimate of a fair and reasonable allowed return on common equity ("ROE") for MAWC in light of the Commission's recent allowed ROE determinations in the Ameren Missouri and KCPL rate cases.[4]

Staff's multi-stage DCF for the water utility industry analysis shows that the cost of equity for the water utility industry is approximately 7.40% using an expected long-term nominal growth rate in the economy similar to what was used in the 2014 electric rate cases for the perpetual growth rate. For purpose of comparison and assistance in evaluating the fairness and reasonableness of an allowed ROE for MAWC as compared to Ameren Missouri and KCPL, Staff also performed an updated multi-stage DCF analysis of the same refined electric utility proxy group (absent Southern Company) Staff used in the recent KCPL, Ameren Missouri and Empire rate cases. Although Staff expressed concerns in the recent electric utility rate cases about using the long-term nominal GDP growth rate for the perpetual growth rate for the electric utility industry, applying this growth rate to both the electric and water utility industries implies a significantly lower cost of equity for the water utility industry. Using nominal GDP as the perpetual growth rate for both industries implies a cost of equity differential of approximately 100 basis points. However, Staff believes investors use a lower perpetual growth rate for the electric industry as compared to the water industry. When this growth rate difference is appropriately considered, this implies the cost of equity is approximately 35 basis points lower for the water utility industry.

[3] Minus Southern Company because it recently announced a proposed major acquisition of AGL Resources, which can distort its stock price.

[4] The cost of common equity is the return required by investors, determined by expert analysis of market data relating to a carefully-constructed group of proxy companies. The allowed ROE, on the other hand, is the value selected by the Commission for use in calculating a utility's forward-looking rates for implementation at the end of the rate case.

Staff's comparative multi-stage DCF analyses of the electric and water utility industries imply a 50 basis point lower cost of equity for the water utility industry. Because the cost of capital level, at least for A-rated securities, has not changed much since the Commission made its electric utility allowed ROE determinations, this supports the Commission allowing an ROE for MAWC of approximately 9%. However, because other market data, mainly bond yield information and betas, imply the water utility industry's cost of capital may actually be somewhat similar to that of the electric utility industry, Staff believes MAWC's allowed ROE should be based on the mid-point of the upper half of Staff's recommended allowed ROE range.

Staff's recommended allowed ROE range of 8.50% to 9.50%, with a point estimate of 9.25% produces a ROR range of 6.94% to 7.41%, with a point estimate of 7.29% the details of which are shown in the following table:

			Allowed Rate of Return Using Common Equity Return of:		
Capital Component	Percentage of Capital	Embedded Cost	8.50%	**9.25%**	9.50%
Common Stock Equity	46.99%		3.99%	**4.35%**	4.46%
Preferred Stock	0.16%	8.64%	0.01%	**0.01%**	0.01%
Long-Term Debt	51.43%	5.69%	2.93%	**2.93%**	2.93%
Short-Term Debt	1.41%	0.31%	0.00%	**0.00%**	0.00%
Total	100%		6.94%	**7.29%**	7.41%

The details of Staff's analysis and recommendations are presented in Schedules 1-17 in Appendix 2. Staff's workpapers will be provided to the parties at the time of filing Staff's Cost of Service Report. Staff will make any source documents of specific interest available upon the request of any party to this case or upon the Commission's request.

B. Analytical Parameters

The determination of a fair rate of return is guided by principles of economic and financial theory and by certain minimum Constitutional standards. Investor-owned public utilities such as MAWC are private property that the state may not confiscate without

appropriate compensation. The Constitution requires, therefore, that utility rates set by the government must allow a reasonable opportunity for the shareholders to earn a fair return on their investment. The United States Supreme Court has described the minimum characteristics of a Constitutionally-acceptable rate of return in two frequently-cited cases.[5] In ***Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia***, the Court stated:[6]

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market and business conditions generally.

Similarly, in the later of the two cases, ***Federal Power Commission v. Hope Natural Gas Co.***, the Court stated:[7]

> "[R]egulation does not insure that the business shall produce net revenues." But such considerations aside, the investor interest has a legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.

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[5] ***Federal Power Commission v. Hope Natural Gas Co.,*** 320 U.S. 591, 64 S.Ct. 281, 88 L.Ed. 333 (1943); ***Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia,*** 262 U.S. 679, *43 S.Ct. 675, 67 L.Ed. 1176* (1923).

[6] 262 U.S. at 692-693, 43 S.Ct. at 679, 67 L.Ed. at 1182-83.

[7] 320 U.S. at 603, 64 S.Ct. at 288, 88 L.Ed. at 345.

From these two decisions, Staff derives and applies the following principles to guide it in recommending a fair and reasonable ROR:

1. A return consistent with returns of investments of comparable risk;
2. A return sufficient to assure confidence in the utility's financial integrity; and
3. A return that allows the utility to attract capital.

Embodied in these three principles is the economic theory of the opportunity cost of investment. The opportunity cost of investment is the return that investors forego in order to invest in similar risk investment opportunities that vary depending on market and business conditions.

The methodologies of financial analysis have advanced greatly since the ***Bluefield*** and ***Hope*** decisions.[8] Additionally, today's utilities compete for capital in a global market rather than a local market. Nonetheless, the parameters defined in those cases are readily met using current methods and theory. The principle of the commensurate return is based on the concept of risk. Financial theory holds that the return an investor may expect is reflective of the degree of risk inherent in the investment, risk being a measure of the likelihood that an investment will not perform as expected by that investor. Any line of business carries with it its own peculiar risks and it follows, therefore, that the return MAWC's shareholders may expect is equal to that required for comparable-risk utility companies.

Financial theory holds that the company-specific Discounted Cash Flow ("DCF") method satisfies the constitutional principles inherent in estimating a return consistent with those of companies of comparable risk;[9] however, Staff recognizes that there is also merit in analyzing a comparable group of companies as this approach allows for consideration of industry-wide data. Because Staff believes the cost of equity can be reliably estimated using a comparable group of companies and the Commission has expressed a preference for this approach, Staff relies primarily on its analysis of a comparable group of companies to estimate the cost of equity for MAWC.

[8] Neither the Discounted Cash Flow (DCF) nor the Capital Asset Pricing Model (CAPM) methods were in use when those decisions were issued.

[9] Because the DCF method uses stock prices to estimate the cost of equity, this theory not only compares the utility investment to other utilities, but it compares the utility investment to all available assets. Consequently, setting the allowed ROE based on a market-determined cost of equity is necessarily consistent with the principles of ***Hope*** and ***Bluefield.***

In this case, Staff has applied this comparable company approach through the use of both the DCF method and the Capital Asset Pricing Model (CAPM). Properly used and applied in appropriate circumstances, both the DCF and the CAPM methodologies can provide accurate estimates of a utility's cost of equity. Because it is well-accepted economic theory that a company that earns its cost of capital will be able to attract capital and maintain its financial integrity, Staff believes that authorizing an *allowed* return on common equity based on the *cost* of common equity is consistent with the principles set forth in ***Hope*** and ***Bluefield***. However, as Staff will discuss extensively throughout this section of the report, Staff believes it is common practice for commissions to allow returns on equity that are higher than the costs of equity for utilities. Consequently, Staff's recommended allowed ROE is higher than Staff's estimate of MAWC's cost of equity.

Because the Commission recently authorized ROEs of 9.53% for Ameren Missouri and 9.50% for KCPL based on recent economic and capital market conditions, Staff believes it can best serve the Commission by providing it an estimate of the relative difference between the electric utility industry's cost of equity and the water utility industry's cost of equity. Staff believes the difference in the cost of equity between the industries as of the end of November 2015 is approximately 25 basis points, based on a range of 0 to 100 basis points. The low end of Staff' range of cost of equity differences is based on bond yield data and betas that imply little to no difference in the cost of capital, whereas the high end of the range is based on Staff's application of a multi-stage DCF to both industries using the same perpetual growth rate. If a lower perpetual growth rate is used for the electric utility industry as compared to the water utility industry, then the implied cost of equity differential is approximately 30 to 65 basis points. Consequently, Staff believes an allowed ROE anywhere in the range of 8.5 to 9.5 percent would be fair and reasonable, but Staff believes an allowed ROE of 9.25 percent most properly balances the Commission's recent decisions as it relates to current conditions in the capital markets and a comparison of various capital market data between the water and electric utility industries.

C. Current Economic and Capital Market Conditions

Determining whether a cost of capital estimate is fair and reasonable requires a good understanding of the current economic and capital market conditions, with the former having a significant impact on the latter. With this in mind, Staff emphasizes that an estimate of a

utility's cost of equity should pass the "common sense" test when considering the broader current economic and capital market conditions.

1. Economic Conditions

Although economic growth was positive in 2015, this growth has been fairly low. Real Gross Domestic Product ("GDP") increased by 0.6 percent in the first quarter, 3.9 percent in the second quarter, and 2.1 percent in the third quarter.[10] An article in the in *Wall Street Journal* indicated the following about corporate profits in the third quarter:

> A comprehensive measure of companies' profits across the U.S.—earnings adjusted for inventory and depreciation—dropped to $2.1 trillion in the third quarter, down 1.1% from the second quarter, the Commerce Department said Tuesday. Compared with a year earlier, profits fell 4.7%, the biggest annual decline since the second quarter of 2009. That marked only the second time profits have fallen on a year-over-year basis since the recession ended in mid-2009.[11]

The article went on to say the following about the likely impact of the release of these latest figures on the Federal Open Market Committee (FOMC) meeting on December 15 and 16:

> Economists generally said the latest figures are unlikely to dissuade Fed officials from moving in December. "Although the recovery from the Great Recession has been disappointing at times, the positive flip side is that a six-year run of moderate growth has prevented the economy from overheating," PNC senior economist Gus Faucher said in a note to clients.
>
> However, softness in the corporate sector means the Fed may need to stick to an even lower trajectory of rate increases in the coming years, said ITG Investment Research chief economist Steve Blitz.

Although the Fed has already announced an increase in the Fed Funds rate at its December 15-16 meeting, it appears that the Fed will need to be very careful about how quickly it increases the Fed Funds rate due to the fragile economy. Although some believe that an increase in the Fed Funds rate will cause an increase in long-term rates, this is not likely to happen. Long-term rates typically are much more a function of the market and economic forces rather than monetary policy influence. In fact, many market participants believed long-term rates would increase when the Fed terminated its bond-buying program in

[10] http://www.bea.gov/national/index.htm#gdp - "Real" GDP is adjusted to reflect inflation.

[11] Kate Davidson and Theo Francis, "Falling Corporate Profits Blur U.S. Growth Outlook," *Wall Street Journal,* pp. A1 and A6, November 25, 2015.

October 2014. However, market forces, mainly concerns about the impact of falling energy prices and slowing growth in China and economic and financial concerns in European countries caused extreme concern about the outlook for growth across the world, let alone in the United States. As a result, long-term rates actually declined after the Fed terminated its bond-buying program, causing utility stock prices to increase dramatically at the end of 2014 and into early 2015. As 2015 draws to a close one of the key areas of interest for the markets in general, but utilities in particular, is whether an increase in the Fed Funds rate will cause an increase in financing costs. The answer is *yes* for short-term financing instruments, but not necessarily for long-term financing instruments. A recent *WSJ* article[12] discussed Fed Chairwoman Janet Yellen's view that "the neutral interest rate—the just-right level for overnight rates when inflation is on target, the economy is growing steadily and the economy is at full employment—has fallen in recent years." It appears that there are longer-lasting, secular factors at work, such as an aging population, that have caused the Fed to reduce its outlook for a sustainable pace of economic growth. Consequently, the author of the *WSJ* article surmises that "Someday, long-term rates will rise. But someday might not come for a long time."

The belief that the sustainable growth in the economy is well below that of the past is showing up in the Fed's projections of sustainable long-term economic growth. As of September 2015, the Federal Reserve Board Members and the Federal Reserve Bank Presidents projected real GDP would grow between 2.0% and 2.3% in 2015, 2.2% to 2.6% in 2016, 2.0% to 2.4% in 2017 and 1.8% to 2.2% in 2018. The longer run projections for real GDP growth were between 1.8% to 2.3%. All of these projections, except 2015, are downward revisions from projections made in June 2015.

2. Capital Market Conditions

a. Utility Debt Markets

Utility debt markets indicate a slightly higher cost-of-capital environment than that which existed when the Commission determined an allowed ROE of approximately 9.5% was fair for KCPL and Ameren Missouri. The average utility bond yields, as reported in the Mergent Bond Record, at the time Staff recommended the Commission lower Ameren

[12] Justin Lahart, "Where the Fed's Rate Path Leads," *Wall Street Journal,* p. C10, December 2, 2015.

Missouri's allowed ROE by 25 to 75 basis points, were approximately 4.3%. Average utility bond yields declined to a recent historical low of 3.83% in January 2015. Since January 2015, average utility bond yields have been increasing. At approximately the time the hearings in the KCPL rate case began, average utility bond yields were slightly higher than they were when Staff performed its analysis in the Ameren Missouri rate case. The average utility bond yield for the last three months through November 2015 was approximately 4.7%, which is 40 basis points higher than when Staff recommended the Commission reduce Ameren Missouri's allowed ROE by 25 to 75 basis points.

Although the average utility bond yields indicate an increase in the cost of capital, the utility bond yield data, broken down by rating category, indicate that the increase in the cost of capital is much more pronounced for utilities that have a weaker investment grade credit rating, i.e., a 'BBB' rating rather than an 'A' rating. Schedule 4-4 shows the average yields on 'A'-rated utility bonds versus 'BBB'-rated utility bonds since January 1, 2014. Typically the spread between 'A' rated utility bonds and 'BBB'-rated utility bonds is approximately 50 basis points over the long-term. However, since the time Staff did its analysis in the Ameren Missouri rate case, this spread has more than doubled to over 100 basis points. This is certainly a sign of increased risk aversion in the capital markets. Although recent financial press is well documented about recent increases in yields in the junk bond, i.e., below investment grade, markets, this appears to be spilling over to lower quality investment grade bonds as well. Consequently, while an average of all rating categories of utility bond yields indicates a 40 basis point increase, most of this increase is concentrated in lower rated debt securities due to recent troubles in the junk bond markets, which includes liquidity problems.

The average 'A'-rated utility bond yield at the time Staff performed its cost of capital analysis in the Ameren Missouri rate case was about 4.15%,[13] whereas the average A-rated utility bond yield for the three months through November 2015 was 4.35%, an increase of approximately 20 basis points. The average 'BBB'-rated utility bond yield at the time Staff performed its cost of capital analysis in the Ameren Missouri case was approximately 4.70%,[14] whereas the average 'BBB'-rated utility bond yield for the three months through November 2015 was 5.50%, an increase of 80 basis points.

[13] Average monthly yield for August, September and October 2014.

[14] Average monthly yield for August, September and October 2014.

Because the widening of costs between 'A'-rated and 'BBB'-rated utility bonds is quite significant and is relevant in determining a fair and reasonable allowed ROE for MAWC, Staff also evaluated the average 'A'-rated and 'BBB'-rated yields for the broader corporate bond indices. The average yields on all corporate bonds are showing the same widening of the spread between 'BBB'-rated and 'A'-rated bond securities. The average yield on a 'BBB' corporate bond as of November 2015 was 5.46%, 11 basis points lower than the average on the 'BBB' utility bond yield. The average yield on an 'A' rated corporate bond yield was 4.43% as of November 2015 compared to the average yield on an 'A' rated utility bond yield of 4.40%. Consequently, the widening of the spreads is not limited to utility bonds. The higher required returns for lower grade investment grade bonds and junk bonds are due to increased selling pressure for companies with lower credit quality.

Considering that MAWC has debt securities considered to be of 'A'-rated quality through its parent company, to the extent the Commission believes the allowed ROE should be influenced by recent changes in the broader utility debt markets, Staff believes it should be toward the lower end. However, to the extent Missouri's utilities, or at least their parent companies, have outstanding bonds traded in the secondary markets, it is also very relevant to analyze this company-specific data to determine a reasonable estimate of the cost of capital, and potentially a reasonable allowed ROE. Although this company-specific debt yield information is very helpful because it informs the Commission as to the yield investors are currently requiring on Missouri utilities', and/or their parent companies' debt capital, Staff notes that some of the bonds are very thinly traded, if they are traded at all. Additionally, the terms of some of these bonds may differ, such as the time to maturity, secured/unsecured, callable or not, date it's callable, etc. Because American Water's bonds are 'A'-rated and Ameren Missouri's bonds are 'A'-rated, Staff will specifically compare the bond costs of these two companies for purposes of determining if there is a significant cost of capital difference between them. Staff specifically analyzed bonds that had maturities of approximately 20 years or greater and those that had at least five trades during August, September and October 2014 (the period Staff analyzed in the Ameren Missouri rate case) and five trades for the three months through November 2015 (the period analyzed in this case).

MAWC does not have any outstanding bonds traded in the secondary market. As Staff will explain in much more detail in the section of this report addressing Staff's recommended capital structure, because American Water issues debt to third-party investors on behalf of its subsidiaries, these are the bonds that are traded in the secondary market. Consequently, the only debt yield information available for over-the-counter trades is for American Water's bonds. American Water has three bonds with maturities of 20 years or more that are traded fairly frequently.[15] These bonds have maturities from 22 to 30 years; have an 'A' rating from S&P and an 'A3' rating from Moody's; and are unsecured notes. During the three months through November 2015, these bonds have had an average yield-to-maturity of approximately 4.25% to 4.30%. Only two of these bonds traded at the time of Ameren Missouri's last rate case. These bonds traded at an average yield-to-maturity 4.21% to 4.25% for the three months ended October 2014. Consequently, based on American Water's bond yields, an 'A'-rated water utility bond cost has not changed much since the fall of 2014.

Ameren Missouri issues its own debt and this debt is traded in the secondary markets. Ameren Missouri has two long-term bonds that are traded fairly frequently.[16] Ameren Missouri has one other long-term bond that has been traded in the secondary markets, but only three times in the last three months.[17] The two more frequently traded bonds mature in 27 and 30 years; have 'A' ratings from S&P and 'A2' ratings from Moody's; and are secured notes. During the three months through November 2015, these two bonds have had an average yield-to-maturity of approximately 4.14% and 4.18%. This implies that Ameren Missouri has a slightly lower cost of capital than American Water. Only one of these bonds traded at the time of Ameren Missouri's last rate case. This bond traded at an average yield-to-maturity of 4.05% for the three months ended October 2014, which implies that Ameren Missouri's cost of capital has increased slightly since the fall of 2014.

American Water's and Ameren Missouri's cost of debt information corroborate the Moody's average yield information that indicates that the cost of capital has not changed

[15] Symbol-AWK4277684, CUSIP-03040WAM7; Symbol-AWK3943696, CUSIP-03040WAJ4; and Symbol-AWK.GJ, CUSIP-03040WAD7.

[16] Symbol-AEE4229257, CUSIP-906548CL4; and Symbol-AEE3899397, CUSIP-906548CJ9.

[17] Symbol-AEE-IA, CUSIP-906548CH3.

much for 'A'-rated public utilities. Consequently, to the extent the Commission believes its 9.53% allowed ROE for Ameren Missouri was reasonable, and the cost of debt information was looked at in isolation without considering cost of equity estimation methodologies, this would certainly imply that a similar allowed ROE may be considered fair and reasonable for MAWC. However, Staff believes a comparison of its cost of equity results between industries supports a slightly lower allowed ROE for MAWC.

b. Utility Equity Markets

For the twelve months ending December 4, 2015, the total return on the Dow Jones Industrial Average (DJIA) was 1.9%, the total return on the Standard & Poor's 500 ("S&P 500") was 2.9%,[18] the total return on Staff's 2014 refined electric utility proxy group was 2.83%,[19] and the total return on the Staff's water utility proxy group was 12.13%. For the five years ending December 4, 2015, the total return on the DJIA was 78.40%, the total return on the S&P 500 was 89.9%,[20] the total return on Staff's 2014 refined electric utility proxy group was 95.98%,[21] and the total return Staff's water utility group was 91.19%.[22] The fact that the water and electric utility industries have outperformed the S&P 500 over the last five years is largely because of increased valuation levels of utility stocks due to a general decline in long-term interest rates, i.e., a decline in the cost of capital. Staff believes this was clearly established in the recent electric utility rate cases in 2014 so Staff will give more attention to comparing and contrasting water utility stocks to those of electric utility stocks, especially for the period since the fall of 2014, which was the period evaluated by the Commission when it made its allowed ROE determination in the Ameren Missouri rate case.

First, one needs to understand the fundamental drivers of returns for each industry in order to be able to determine what, if any, changes have occurred to the cost of equity for these industries since the fall of 2014. As Staff has explained in recent electric utility rate case testimonies, the biggest cause for higher utility stock returns, at least during the fourth quarter of 2014 and early 2015, was the unexpected decline in long-term interest rates through

[18] US Capital Advisors, USCA Weekly Downstream Utility Update, December 7, 2015.

[19] SNL Financial.

[20] US Capital Advisors, USCA Weekly Downstream Utility Update, December 7, 2015.

[21] SNL Financial.

[22] US Capital Advisors, USCA Weekly Downstream Utility Update, December 7, 2015.

January 2015, which caused a significant decline in utility dividend yields and a significant increase in price-to-earnings (P/E) ratios. However, when comparing these metrics between the water utility industry and the electric utility industry during the same periods, the water utility industry consistently has lower dividend yields and higher P/E ratios. While changes in these metrics for the same industry over time provides useful information about the relative change in the cost of equity for that same industry, comparing these metrics across industries to infer cost of equity differences can be misleading. For example, it is erroneous to conclude that because the S&P 500 has typically had a dividend yield of approximately 2% its cost of equity is lower than that of utility companies. It simply means that investors expect to achieve a majority of their returns from the S&P 500 through capital gains, i.e., growth, rather than from the dividend. As Staff has explained in previous testimonies, for the period 1974 through 2010, approximately 2/3 of returns for the S&P 500 came from capital gains and the rest was from dividends, whereas the opposite is true for the utility industry.[23] However, while the water utility industry does have a high dividend payout ratio, it is not as high as the average for the electric utility industry. Consequently, water utility industry stocks tend to create a greater proportion of their returns from capital gains than electric utility industry stocks. Based on Staff's water utility proxy companies and electric utility proxy companies that had market data back to 1992, Staff determined that the total return from capital gains was slightly over 60% for the water utility industry and slightly over 50% for the electric utility industry. Consequently, the fact that water utility stocks tend to generate more of their returns from growth in the stock price, as compared to the electric utility industry, explains a lower dividend yield and a higher P/E ratio as compared to the electric utility industry.

The above explains why one can't just simply conclude the water utility industry has a lower cost of equity than the electric utility industry due to higher P/E ratios and lower dividend yields. But a difference in the cost of equity can certainly partially explain the spread in these ratios. However, it is very difficult to point to any specific capital market data to determine if and by how much the cost of equity for the water utility industry may differ from the electric utility industry. However, in the following paragraphs Staff will identify and

[23] Hugh Wynne, Francois D. Broquin, Saurabh Singh, "U.S. Utilities: Our Dividend Growth Model Identifies Utilities Poised to Pay More," May 20, 2011, Bernstein Research.

discuss some of the valuation differences between the two industries in recent months and how this compares to the valuation of the two industries in the fall of 2014.

During November 2015 the average dividend yield on Staff's water utility proxy group was 2.7%. This compares to an average dividend yield of approximately 2.9% during October 2014. During November 2015, the average P/E ratio for Staff's water utility proxy group was 20.56x. This compares to an average P/E ratio of 19.0x during October 2014. Consequently, based on the water utility industries' lower dividend yields and higher P/E ratios compared to the fall of 2014, water utility stocks seem to be implying a slightly lower cost of equity for the water industry now as compared to last year.

During November 2015, the average dividend yield on Staff's 2014 electric utility proxy group was 3.60%. This compares to an average dividend yield of approximately 3.65% during October 2014. During November 2015, the average P/E ratio for Staff's 2014 electric utility proxy group was 16.17x. This compares to an average P/E ratio of 15.48x during October 2014. Consequently, based on the electric utility proxy group's slightly lower dividend yields and higher P/E ratios compared to the fall of 2014, electric utility stocks also seem to be implying a slightly lower cost of equity now as compared to last year. However, it does not seem as pronounced as it is for the water utility industry.

If long-term bond yields were lower now as compared to the fall of 2014, Staff would be confident in concluding that both the water and electric utility industries' higher valuation levels now compared to the fall of 2014 are explained by a lower required return on equity. In the fall of 2014 to early 2015, it was clear that higher utility P/E ratios were being driven by the decline in interest rates, which made it very convincing that the cost of equity had declined. The other factor that often explains an increase in valuation ratios is a higher expected growth rate in one period as compared to another. It appears that this may partly explain the higher valuation levels for some of the water utility companies, but not for the electric utility companies.

Although the above information doesn't provide a definitive answer as to whether the cost of equity is lower for the water utility industry as compared to the electric utility industry, it does provide empirical and logical support for the conclusion that water utility stock prices should grow at a higher rate than electric utility stocks. As Staff will explain later in its testimony, Staff believes this information supports the assumption that the water utility stocks

may be able to grow at a rate similar to GDP in perpetuity, but this is not a reasonable assumption for the electric utility industry. If it is appropriately recognized that a perpetual growth rate for electric utility stocks should not be the same as GDP, then the cost of equity differential between electric utility stocks and water utility stocks proves to be much lower.

D. MAWC's and American Water's Operations

The following excerpts from American Water's Form 10-K filing with the United States Securities and Exchange Commission ("SEC") for the 2014 calendar year, provides a good description of American Water's current business operations and current organizational structure:

> American Water Works Company, Inc. (herein referred to as "American Water" or the "Company") is the largest investor-owned United States water and wastewater utility company, as measured both by operating revenues and population served. Our approximately 6,400 employees provide drinking water, wastewater and other water related services to an estimated 15 million people in 47 states and in one Canadian province. Our primary business involves the ownership of water and wastewater utilities that provide water and wastewater services to residential, commercial, industrial and other customers. Our Regulated Businesses that provide these services are generally subject to economic regulation by state regulatory agencies in the states in which they operate. The federal government and the states also regulate environmental, health and safety and water quality matters. Our Regulated Businesses provide services in 16 states and serve approximately 3.2 million customers based on the number of active service connections to our water and wastewater networks. We report the results of these businesses in our Regulated Businesses segment. We also provide services that are not subject to economic regulation by state regulatory agencies. We report the results of these businesses in our Market-Based Operations segment.
>
> In 2014, we continued the execution of our strategic goals. Our commitment to growth through investment in our regulated infrastructure and expansion of our regulated customer base and our Market-Based Operations, combined with operational excellence led to continued improvement in regulated operating efficiency, improved performance of our Market-Based Operations, and enabled us to provide increased value to our customers and investors. During the year, we focused on growth, addressed regulatory lag, made more efficient use of capital and improved our regulated operation and maintenance ("O&M") efficiency ratio.

E. MAWC and American Water's Credit Ratings

1. Credit Ratings

MAWC does not receive an individual credit rating as a stand-alone entity. This is logical considering the fact that MAWC relies on American Water Capital Corporation (AWCC) to issue debt financing for American Water's subsidiaries, which in turn loans these proceeds to the subsidiaries through internal loan agreements.

Therefore, it is important for American Water's access to the debt markets to have its debt rated so potential debt investors can evaluate rating agencies opinions' in determining a fair price to pay for American Water's debt. Staff understands the credit quality of AWCC to be based on American Water's consolidated credit quality. AWCC is a wholly-owned subsidiary of American Water that was created for the special purpose of serving as the primary funding vehicle for American Water and its subsidiaries. Although AWCC and American Water are assigned credit ratings, because AWCC's purpose is to manage and issue financing for American Water, the credit ratings for each entity are based on American Water's consolidated operations.

American Water is currently rated by Moody's and Standard & Poor's ("S&P"). The corporate credit ratings assigned to American Water by Moody's and S&P are 'Baa1' and 'A', respectively. On May 7, 2015, S&P upgraded American Water's corporate credit rating to 'A' from 'A-' based on improved financial measures. S&P specifically stated the following in support of its upgrade:

> The upgrade reflects the continued improvement in cash flow and leverage measures, primarily as a result of the company's improved management of regulatory risk along with the continued execution of its cost management initiative, which provides for incremental stability and certainty in cash flow generation. We expect that the company will continue its relatively conservative financial policies to maintain its credit measures.

S&P's methodology of assessing corporations in general, and utilities in specific, has changed since MAWC's last rate case. American Water is now assigned a "regulatory/advantage" score based on S&P's assessment of the regulatory environment and the utility company's ability to manage the regulatory environment. However, it is important to realize that American Water operates in many state jurisdictions. Consequently, S&P's assignment of an overall score takes each of these jurisdictions into consideration, especially the jurisdictions in

which American Water has its largest water utility subsidiaries. According to the May 7, 2015, S&P research report announcing the upgrade of American Water's credit rating, New Jersey, Pennsylvania, Illinois, Missouri, Indiana, California, and West Virginia represent approximately 87% of American Water's revenues and 85% of American Water's customers. Collectively, S&P considers the regulatory environments in which American Water operates to be "Strong," which is the best category possible.

F. Cost of Capital

In order to arrive at Staff's recommended ROR, Staff specifically examined (1) an appropriate ratemaking capital structure, (2) the Company's embedded cost of debt, and (3) an evaluation of a fair and reasonable allowed ROE in light of the Commission's recent decisions in the Ameren Missouri and KCPL rate cases.

1. Capital Structure

The capital structure Staff used for this case is American Water's capital structure on a consolidated basis, as of December 31, 2014. Schedule 6, attached as Appendix 2 to this Report and incorporated by reference herein, presents American Water's capital structure and associated capital ratios. The resulting capital structure consists of 46.99 percent common stock equity, 51.43 percent long-term debt, 0.16 percent preferred stock and 1.41 percent short-term debt.

MAWC's response to Staff Data Request (DR) No. 0195 indicates that American Water has been consistently carrying a higher monthly balance of short-term debt as compared to the monthly balances of construction work in progress (CWIP). This implies that the American Water is using short-term capital to support its long-term assets, which lowers the overall cost of capital to support its long-term asset base. Consequently, it is appropriate to include a net amount of short-term debt in the capital structure for purposes of setting MAWC's allowed ROR. Staff recommends 1.41 percent of MAWC's ratemaking capital structure be allocated to short-term debt.

Staff has consistently recommended the Commission use American Water's capital structure for MAWC's ratemaking capital structure. Nothing has changed since MAWC's last rate case to cause Staff to change its position. Staff offers the following reasons for recommending that American Water's capital structure be used to set MAWC's allowed ROR:

First, MAWC is not operating as an independent entity, at least when considering MAWC's procurement of financing and the cost of that financing. For example, MAWC has a Financial Services Agreement[24] with AWCC through which AWCC arranges short-term borrowings and performs cash management for MAWC. Under the cash management program, operating cash surpluses and deficits of each participating affiliate are lent to or borrowed from AWCC on a *daily* basis, showing heavy integration of MAWC's financial management with American Water's other operations. While MAWC has accessed the capital markets directly in the past by issuing tax-advantaged bonds through the State Environmental Improvement and Energy Resources Authority, MAWC has not done so for approximately 10 years. AWCC is the primary source of long-term and short-term debt financing for MAWC and this appears to continue to be the case. As of December 31, 2014, over 80 percent of the debt shown on MAWC's balance sheet was received by means of debt issuances by AWCC.

Second, the debt issued by AWCC is rated by credit rating agencies based on the consolidated credit quality of American Water. Therefore, the cost of any debt that MAWC receives from AWCC is and will be based on the consolidated creditworthiness of American Water, (i.e. the business risk and financial risk associated with American Water's consolidated operations).

Third, American Water is primarily a regulated water distribution utility, meaning that the business risks of American Water are similar to that of MAWC. If the business risks of the parent company are similar to that of the subsidiary, then each entity should be able to incur similar amounts of financial risk. Presumably this should cause their capital structures to be fairly similar. Because it is the parent company's consolidated operations that drive the cost of debt capital and equity capital, the parent company's capital structure is the capital structure that will be analyzed by investors when determining the required rate of return for debt issued by AWCC and equity issued by American Water. In fact, American Water's SEC Form 10-K filings indicate that American Water's capital structure has contained approximately 45% equity over the last three years. If short-term debt is removed from the capital structure, then the ratio would be closer to 47%. Staff notes that it is not always

[24] See Financial Service Agreement, attached as Appendix 2 to MAWC's Application filed in Case No. WF-2002-1096.

appropriate to use the parent company's cost of common equity if the parent company's business risk profile is significantly different than that of its regulated subsidiaries.

Fourth, American Water employs double leverage, a term used to describe a situation in which the parent company uses financing other than equity financing, usually debt, raised at the parent company level to infuse equity in its subsidiaries. American Water currently has over $1 billion[25] of debt outstanding at the holding company level and its only assets are its stock ownership in its water utility subsidiaries, therefore, the funds from this debt financing are apparently being used to invest in American Water's subsidiaries as equity infusions.[26]

Finally, it appears that all debt issued by AWCC and loaned to MAWC is essentially guaranteed by American Water. Although there are internal loan documents between MAWC and AWCC, the ultimate responsibility for the payment of the debt service on the debt through AWCC rests with American Water. This calls into question whether it is appropriate to consider the debt received by MAWC from AWCC as truly MAWC debt. The subsidiary's use of debt financing that is backed by the parent, supports the Staff's recommendation to use American Water's consolidated capital structure.

Schedules 5-1 and 5-2 show MAWC's and American Water's historical capital structures for the last ten years. The most relevant years for comparison are the past eight years because RWE Aktiengesellschaft (RWE) still had a significant investment in American Water's preferred stock in 2005 and 2006. This explains the reduction of the balance of American Water preferred stock by $1.75 billion in 2007 compared to 2006. RWE began the process of divesting its equity ownership interest in American Water in April 2008 through an initial public offering (IPO) of common stock. As of November 24, 2009, RWE had completely divested all equity ownership interest it had in American Water.

Based on the information shown in Schedules 5-1 and 5-2, it appears that American Water has targeted a common equity ratio of approximately 45% to 47%. American Water appears to prefer a common equity ratio of 48% to 50% for its MAWC operations. Because MAWC does not issue its own debt, Staff believes American Water maintains a higher equity ratio at its MAWC for the purpose of attempting to achieve a higher revenue requirement in

[25] American Water's SEC 2014 Form 10k, p. 67.

[26] Because American Water does not produce stand-alone holding company financial statements, Staff could not directly confirm this, but this is consistent with Staff's understanding of American Water's operations.

the form of a higher pre-tax rate of return. The Commission can prevent American Water from receiving an unreasonable rate of return from its MAWC subsidiary by setting MAWC's rate of return based on American Water's capital structure, which reflects the capital structure that American Water targets for purposes of capitalizing all of its regulated water utility operations.

2. Embedded Cost of Debt

Staff recommends the use of American Water's consolidated embedded cost of debt for purposes of setting MAWC's ROR, which is 5.69% based on MAWC's response to Staff DR No. 0187.

3. Embedded Cost of Preferred Stock

Staff recommends the use of American Water's consolidated embedded cost of preferred stock for purposes of setting MAWC's ROR, which is 8.64% based on MAWC's response to Staff DR No. 0187.

4. Cost of Short-Term Debt

Staff recommends the use of American Water's average cost of short-term debt for purposes of setting MAWC's ROR, which averaged 0.31% for the twelve months ended December 31, 2014.

5. Cost of Common Equity

Staff estimated MAWC's cost of common equity through a comparable company cost-of-equity analysis of a proxy group of water utility companies. Additionally, Staff used a CAPM analysis and a survey of other indicators as a check of the reasonableness of its recommendations.

a. The Proxy Groups

The ultimate goal of selecting a proxy group is to select companies whose operations are confined as much as possible to regulated utility operations ("pure-play regulated utilities"/ "pure-play") with a majority of the regulated utility operations being that of the water utility sector.

For Staff's proxy group, Staff started with the nine publicly-traded water utility companies covered by Edward Jones in its September 30, 2015, edition of its "Water Utility Industry Summary." Staff then applied to the following criteria to select a reasonably pure-

play proxy group that has sufficient financial and capital market data available for purpose of estimating a cost of equity:

1. Classified as a water utility company by Edward Jones;
2. Stock publicly traded: this criterion did not eliminate any companies;
3. Information printed in Value Line: this criterion did not eliminate any companies;
4. Five years of data available: this criterion did not eliminate any companies;
5. At least investment grade credit rating: this criterion eliminated one company because of lack of rating information;
6. Projected growth rate available from Value Line or Reuters: this criterion did not eliminate any companies;
7. At least 80 percent of income from regulated utility operations: this criterion did not eliminate any companies;
8. At least 50 percent of regulated income from regulated water utility operations: this criterion did not eliminate any companies;
9. No reduction in dividends per share (DPS) since 2012: this criterion did not eliminate any companies.

Staff believes using the above criteria allows for the selection of a predominately pure-play, comparable-risk water utility proxy group. In fact, Staff notes all but one of the companies selected, American States Water Company, actually had greater than 90% contribution of revenues and income from their regulated utility operations in the past calendar year, providing Staff even more comfort that it selected an appropriate proxy group. Consequently, Staff believes using this proxy group of water utility companies will provide a very reliable cost of equity estimate for a regulated water utility company as long as reasonable inputs are used in the methods employed to estimate the cost of equity.

b. The Constant-growth DCF

Staff started its evaluation of the water utility industry's cost of common equity by applying values derived from the proxy group to the constant-growth DCF model. The constant-growth DCF model is widely used by investors to evaluate stable-growth investment opportunities, such as regulated utility companies. The constant-growth version of the model

is usually considered appropriate for mature industries such as the regulated utility industry.[27] It may be expressed algebraically as follows:

$$k = D_1/P_0 + g$$

Where: k is the cost of equity;

D_1 is the expected next 12 months dividend;

P_0 is the current price of the stock; and

g is the dividend growth rate.

The term D1/P0, the expected next 12-months' dividend divided by current share price, is the dividend yield. Staff calculated the dividend yield for each of the comparable companies by dividing the pro-rated 2015 and 2016 calendar year projected dividends per share from Value Line (*see* Schedule 13) by the monthly high/low average stock price for the three months ending November 30, 2015 (*see* Schedule 12).[28] Staff used the above-described stock price because it reflects current market expectations. The projected average dividend yield for the water utility proxy group is approximately 2.80%, unadjusted for quarterly compounding.

i. The Inputs

In the DCF method, the cost of equity is the sum of the dividend yield and a growth rate ("g") that represents the projected capital appreciation of the stock. In estimating a growth rate, Staff considered the actual DPS, earnings per share (EPS) and book value per share (BVPS) for each of the comparable companies and also the projected DPS, EPS and BVPS. Staff also reviewed equity analysts' consensus estimates for long-term compound annual growth rates in EPS as reported by Reuters. Reuters did not report any long-term growth rate estimates in EPS for three of the eight companies in the proxy group. The

[27] Aswath Damodaran, *Investment Valuation: Tools and techniques for determining the value of any asset,* University Edition, John Wiley & Sons, Inc., 1996, p. 195-196; John D. Stowe, Thomas R. Robinson, Jerald E. Pinto and Dennis W. McLeavey, *Analysis of Equity Investments: Valuation*, Association for Investment Management and Research, 2002, p.64.

[28] The monthly high/low averaging technique minimizes the effects of short-term stock market volatility on the calculation of dividend yield. P0 is calculated by averaging the highest and the lowest price for each month during the selected period.

average consensus long-term growth rates in EPS for the five companies in which analysts provided estimates was 5.38% as of December 1, 2015. (*see* Schedule 11-4).

While Staff may accept the argument that water utilities' EPS can grow over the next five years at a growth rate of approximately 5.40%, a rate which is higher than the consensus GDP long-term growth rate estimates, Staff notes that it would be unreasonable to conclude that this growth rate is sustainable in perpetuity because it does not give consideration to empirical and logical information that suggests that utility companies should grow at a rate less than that of the overall economy.

Historical data also indicates that companies in the S&P 500 (a proxy for the U.S. capital markets) have retained over 60% of their earnings for reinvestment since January 1, 2009.[29] In that instance it is intuitive to estimate the cost of equity using a multi-stage DCF that reflects a higher-than-GDP growth rate in the first stage(s) and then a consensus long-term GDP growth rate estimate for the perpetual stage.

Although regulated water utilities tend to retain more earnings (30% to 40%) than regulated electric utilities, which supports the logic of a higher perpetual growth rate than that used for the electric utility industry, it does not necessarily support the notion that water utilities should have the same perpetual growth rate as the S&P 500. However, due to a lack of data for long-term industry-specific growth rates for the water utility industry, Staff is assuming the perpetual growth rate for the water utility industry will be consistent with long-term GDP growth expectations.

A projected long-term nominal GDP growth rate[30] should be conservatively ascribed as an upper constraint when testing the reasonableness of growth rates used to estimate the cost of equity for a regulated water utility. Staff will provide more detail on economic growth projections when discussing the multi-stage DCF, but a high-end estimate for nominal GDP is not much higher than 4.5%, causing an estimated constant growth rate over this rate to be highly suspect.

Because Staff is not relying on the constant-growth DCF to quantify the difference between the cost of equity for the electric and water utility industries, Staff believes its growth

[29] http://www.spindices.com/indices/equity/sp-500.

[30] The nominal GDP growth rate, contrasted to the real GDP growth rate introduced earlier, is not adjusted for inflation.

rate estimates are not as critical as those it assumed in its multi-stage DCF. However, Staff believes it is important to consider actual experience in actual dividend growth achieved by water utility companies and also the basic characteristics of water utility stocks when determining a reasonable expected growth rate in the DCF. It is critical to remember that the growth rate used in the DCF is supposed to represent the expected capital gains (growth in the stock price) of the utility. Considering the fact that over long-term holding periods the majority of the utility investors' return from investing in utility stocks typically has been from the payment of the dividend, it is simply illogical to expect the growth component of the return to be higher than the dividend yield. Considering the fact that water utility dividend yields currently average 2.80%, this is a bit sobering about water utility investors' expected returns for water utility stocks, but also quite rational considering the current low-interest rate, low-return environment. Even making the assumption that capital gains could equal the dividend yield implies water utility investors are only requiring a return of 5.6% for water utility stocks. While this may seem low for purposes of setting the allowed ROE, it is definitely in the realm of reasonableness for expected returns on regulated utility stocks. Although Staff considers it unlikely that the fundamental characteristics of water utility stocks will cause returns from capital gains to be much higher than dividend returns, because historical dividend growth has been approximately 3.8% and expected dividend growth over the next five years is expected to be higher, Staff used a constant growth rate of 4% to 5% to arrive at a cost of equity estimate of 6.8% to 7.8%.

c. The Multi-stage DCF

i. Overview

The constant-growth DCF model may not yield reliable results if industry and/or economic circumstances cause expected near-term growth rates to be inconsistent with sustainable perpetual growth rates.[31] This especially seems to be the case for the water utility industry because the dividend yields have been fairly low (below 3% compared to slightly below 4% for the electric utility industry) and projected near-term growth rates are higher than economic growth projections. Although Staff is not recommending the Commission

[31] Dr. Aswath Damodaran, Professor of Finance of the New York University Stern School of Business, advocates using a multi-stage methodology if the constant-growth rate is expected to be 1-2% different than the earlier stage growth rates. Aswath Damodaran, *Investment Valuation: Tools and techniques for determining the value of any asset,* University Edition, John Wiley & Sons, Inc., 1996, p. 193.

allow an ROE based on the absolute value of its cost of equity estimates from either the single-stage or multi-stage DCF, Staff believes the multi-stage DCF should be used for purposes of determining if there is an identifiable cost of equity difference between the electric and water utility industries. Staff compared its update of its cost of equity analysis of the electric utility proxy group it used in the 2014 electric rate cases to the multi-stage cost of equity analysis it performed on the water utility industry. Staff believes such an analysis justifies the Commission allowing a lower ROE for MAWC as compared to Ameren Missouri and KCPL.

A multi-stage DCF may use either two or more growth stages, depending on the situation being modeled. In any case, the last stage must use a sustainable rate as it is considered to last into perpetuity. In fact, in Staff's experience, most DCF analyses do not assume a growth rate much higher than the expected rate of inflation, currently 2.0% to 2.5%. The ability of a multi-stage DCF analysis to reliably estimate the cost of common equity is primarily driven by the analyst using a reasonable growth rate for the final stage because this rate is assumed to last into perpetuity. Where three stages are used, the second stage is generally a transitional phase between the high growth first stage and the constant growth final stage.[32]

In the present case, Staff used a three-stage DCF approach, the stages being years 1-5, years 6-10, and years 11 to infinity.[33] For stage one, Staff gave full weight to the analysts' five-year EPS growth estimates. Staff adopts these EPS estimates for the first stage of its model, because Staff understands that these projections are designed to represent expectations over this same 5-year period. For stage two, Staff linearly reduced the growth rate from the stage one level to the constant-growth third stage level, in which Staff assumed a perpetual growth rate consistent with a range of long-term expected steady-state economic growth rates. In the recent electric rate cases, Staff used a point estimate of 4.40% for long-term nominal GDP growth rate based on the fact that this was the mid-point of the long-term sustainable real GDP projections of 2.2% to 2.5% (2.35%), compounded by the expected long-term GDP price deflator of 2.0%. Staff's sources for the range of growth rates were based on several

[32] John D. Stowe, Thomas R. Robinson, Jerald E. Pinto and Dennis W. McLeavey, *Analysis of Equity Investments: Valuation*, Association for Investment Management and Research, 2002, p. 71-72.

[33] In practice, Staff extended the third stage only to year 200.

sources published in the EIA's *2014 Annual Energy Outlook.* Unfortunately, EIA did not publish economic projections from these various sources in its *2015 Annual Energy Outlook*. Fortunately, projected GDP growth is available from a variety of sources, such as the Congressional Budget Office (CBO), the Federal Reserve, the EIA, and Blue Chip Economic Forecasts. Staff will use the CBO, EIA, The Survey of Professional Forecasters published by the Philadelphia Federal Reserve, The Federal Open Market Committee (FOMC), and The Livingston Survey for purposes of long-term projected GDP growth. The CBO projects an annual compound growth rate in nominal GDP of approximately 4.40% through 2025;[34] EIA's reference case projects an annual compound growth rate of approximately 4.3% for the period 2015 through 2040,[35] The Survey of Professional Forecasters projects a 10-year annual compound growth rate in real GDP of 2.5%;[36] The Livingston Survey projects an average annual compound growth rate of 2.5% over the next ten years;[37] and the FOMC projects a central tendency long-term real GDP growth of only 1.8% to 2.2%. In each case in which the sources do not project a nominal GDP growth rate, Staff recommends adding a GDP price deflator of 2.0%, which is the CBO's prediction of long-term inflation and also the inflation rate which is targeted by the Federal Reserve. Based on these projections, the long-term nominal GDP growth rate is expected to approximately be in the range of 4% to 4.5%. These long-term GDP projections are lower than they were at the time of MAWC's last rate case in late 2011 and early 2012.

Although Staff is using a range of 4% to 4.5% for purposes of estimating an absolute value of the cost of equity for the water utility industry, for purposes of quantifying the difference between the cost of equity for the electric utility industry compared to the water utility industry, Staff will use the same GDP estimate it used in the 2014 electric rate cases, which was 4.4%. If anything, the long-term economic projections are more pessimistic than they were in 2014 so using the previous higher GDP growth estimate will cause a higher cost of equity estimate for the water utility industry. (*see* Schedules 15-1 through 15-3).

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[34] https://www.cbo.gov/publication/45066.

[35] http://www.eia.gov/beta/aeo/#/?id=18-AEO2015&region=0-0&cases=ref2015&start=2015&end=2040&f=A.

[36] https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/2015/survq115.

[37] https://www.philadelphiafed.org/research-and-data/real-time-center/livingston-survey.

Based on perpetual growth rate range of 4% to 4.5%, the absolute value of Staff's cost of equity estimate for the water utility industry is in the range of 7.0% to 7.5%, mid-point of 7.25%. Although this is low as compared to allowed ROEs for the water utility industry, Staff believes there is significant observable and practical evidence that supports the notion that the cost of equity for utility companies is fairly low at this time. While Staff believes it is important to inform the Commission of the current low cost of equity environment, Staff also understands commissions throughout the country are hesitant to reduce allowed ROEs to this lower level.

ii. Stage one

The first stage of a multi-stage DCF is usually quite specific due to the ability to forecast cash flows in the near-term with more accuracy. In fact, it is often the case that the first stage of a multi-stage DCF will be based on discrete cash flows projected on an annual basis for the next several years. However, in the context of discounting expected future DPS, it is often the case that a compound growth rate is applied to the current DPS to estimate the expected DPS over the next several years. Although it is rare for a company to tie its targeted DPS growth rate directly to a 5-year EPS projected compound growth rate, because equity analysts' 5-year EPS forecasts are widely available and may provide some insight on expected DPS, Staff decided to use these growth rates for the first 5-years of its multi-stage DCF. However, Staff emphasizes that it has **never** seen an investment analysis of a utility company that used 5-year EPS forecasts for purposes of estimating the growth in DPS in a single-stage, constant-growth DCF or for the final stage in a multi-stage DCF. Considering the fact that the very equity analysts that provide 5-year EPS compound growth rates do not use them as a proxy for expected long-term DPS growth in their own analyses should be proof, in and of itself, that stock prices do not reflect this assumption. Consequently, Staff limited its use of these growth rates to the first five years of its analysis, the very period these growth rates are intended to cover.

iii. Stage two

Stage two, i.e., the transition stage, is simply a gradual movement from above normal growth to more normal/sustainable growth for the final stage. Although stage two can also consist of forecasted discrete cash flows, because it is a transitional period, it is logical to

linearly reduce the high growth first-stage growth over a specific period in order to gradually reduce the growth rate to the expected sustainable growth rate. Staff chose to do this over a 5-year period, which is fairly conventional in multi-stage DCF analysis.

iv. Stage three

Stage three is the final/constant-growth stage. In fact, the final stage can be reduced to the single-stage, constant-growth form of the DCF. Although this is the "generic" stage, it is extremely important to select a reasonable growth rate for this stage to arrive at a reliable cost of equity estimate.

v. Preference for GDP Growth

Although Staff is confident that investors do not expect electric utilities' perpetual per share growth to be consistent with nominal GDP in the long-run, Staff does not have the same confidence about dismissing this assumption for the water utility industry. Staff is hesitant about assuming a perpetual growth rate less than nominal GDP for the water utility industry because water utility companies have consistently retained a greater proportion of their earnings for reinvestment than electric utilities. Although Staff does not have access to as much historical data on the water utility industry as it does the natural gas and electric utility industries, the information Staff has observed on the water utility industry shows that water utility companies have been recently retaining more of their earnings for reinvestment, which has caused a consistent growth in the industries' book value per share of approximately 5% or more. While a growth rate higher than overall GDP cannot continue in perpetuity for the water utility industry, the water utility industry's need for fairly consistent reinvestment supports the theory of growing at rate closer to GDP in perpetuity.

G. Tests of Reasonableness

Staff has tested the reasonableness of its DCF results, both by use of a CAPM analysis and consideration of other evidence.

1. The CAPM

The CAPM is built on the premise that the variance in returns is the appropriate measure of risk, but only the non-diversifiable variance (systematic risk) is rewarded. Systematic risks, also called market risks, are unanticipated events that affect almost all assets to some degree because the effects are economy wide. Systematic risk in an asset, relative to

the average, is measured by the Beta of that asset. Unsystematic risks, also called asset-specific risks, are unanticipated events that affect single assets or small groups of assets. Because unsystematic risks can be freely eliminated by diversification, the reward for bearing risk depends on the level of systematic risk. The CAPM shows that the expected return for a particular asset depends on the pure time value of money (measured by the risk free rate), the reward for bearing systematic risk (measured by the market risk premium), and the amount of systematic risk (measured by Beta). The general form of the CAPM is as follows:

$$k = Rf + \beta\,(Rm - Rf)$$

Where:	k	is the expected return on equity for a security;
	Rf	is the risk-free rate;
	β	is Beta; and
	Rm - Rf	is the market risk premium.

For inputs, Staff relied on historical capital market return information through the end of 2014. For the risk-free rate (Rf), Staff used the average yield on 30-year U.S. Treasury bonds for the three-month period ending November 30, 2015; that figure was 2.96%. For beta (β), Staff relied on Value Line betas.

The average beta for the proxy group was 0.73. For the market risk premium (Rm – Rf) estimates, Staff relied on the historical difference between earned returns on stocks and earned returns on bonds.[38] The first risk premium was based on the long-term arithmetic average of historical return differences from 1926-2014 – 6.20 %. The second risk premium was based on the long-term geometric average of historical return differences from 1926 to 2014 – 4.64%. The results using the long-term arithmetic average risk premium and the long-term geometric risk premium are 7.31% and 6.15%, respectively.

These cost of common equity results support the reasonableness of Staff's cost of equity estimates derived from its DCF analysis. Staff again notes that both U.S. Treasury yields and utility bond yields are quite low (at levels last experienced in the early 1960s) and that the spread between them is presently below their long-term average. It is actually logical in today's capital market environment that investors are only requiring returns on their utility

[38] From Duff & Phelps *2014 Valuation Handbook: A Guide to the Cost of Capital.*

common equity investment in the 6 to 7 percent range. As Staff will explain in its other tests of reasonableness, these cost of equity estimates are consistent with common sense tests.

2. Other Tests

a. The "Rule of Thumb"

A "rule of thumb" method allows an objective test of individual analysts' cost of equity estimates. Because this method is suggested in a textbook[39] used for the curriculum for Chartered Financial Analyst (CFA) Program, Staff believes this method is free of any bias from those involved in utility ratemaking. It is also a useful test because it is very straightforward and limits the risk premium to a 100-basis point range. The cost of equity is estimated by simply adding a risk premium to the yield-to-maturity (YTM) of the subject company's long-term debt. Based on experience in the U.S. markets, the typical risk premium is in the 3% to 4% range. Considering that this is based on general U.S. capital-market experience and that regulated utilities are on the low end of the risk spectrum of the general U.S. market, a risk premium closer to 3% seems logical. This is especially true considering that regulated utility stocks behave like bonds. For the three months ended through November 2015, "A" rated and "Baa" rated long-term utility bonds had average yields of 4.36% and 5.49% respectively.[40] Adding a 3% risk premium, the "rule of thumb" indicates a cost of common equity between 7.36% and 8.49%. Adding a 4% risk premium, the "rule of thumb" indicates a cost of common equity between 8.36% and 9.49%.

b. Average Authorized Returns

Although Staff believes it has appropriately considered this Commission's recent allowed ROE's for purposes of its recommendation in this case, the Staff recognizes that the Commission may also be interested in recent authorized ROEs for other water utility companies throughout the country. This information has historically been compiled and published by Regulatory Research Associates (RRA) for electric and gas utilities. It is Staff's understanding that RRA plans to begin publishing reports on the outcomes of water utility rate cases, but Staff would have to pay an additional subscription fee to obtain access to this information. However, because American Water owns several subsidiaries that have

[39] John D. Stowe, Thomas R. Robinson, Jerald E. Pinto and Dennis W. McLeavey, *Analysis of Equity Investments: Valuation*, Association for Investment Management and Research, 2002, p. 54.

[40] Mergent Bond Record.

regulated water and wastewater operations throughout the United States, Staff simply issued a data request to MAWC to obtain this information.

Staff issued DR No. 0194 to MAWC to request not only authorized returns for each of American Water's subsidiaries, but also the various parties' recommendations. Unfortunately, MAWC only provided information on authorized returns for its sister subsidiaries. The authorized ROE for American Water's other subsidiaries has ranged from 9.34% to 10.25% since January 1, 2010. There have only been two authorized returns in 2015, 9.75% for New Jersey-American Water Company on September 21, 2015, and 10.00% for Maryland-American Water Company on June 19, 2015. It is clear that a majority of the allowed ROEs are in the 9.65% to 10% range, with a couple of allowed returns around 10.25%. However, there does not appear to be a discernable trend in the water utility allowed ROEs over the 5-year period, 2010 through 2015. Staff has not reviewed the details of these cases to determine which allowed ROEs were the result of settlement and which were independently determined through litigation.

c. Cost of Capital Analyses for Goodwill Impairment Analyses

American Water had been required to perform an annual quantitative analysis on its goodwill asset for purposes of financial reporting, in order to ensure that the company is reporting a value of its assets no greater than currently justified. In doing so, American Water consistently hired a financial consultant, Duff & Phelps, LLC, to perform the test. Duff & Phelps also has expertise in estimating the cost of equity and did so in conjunction with its task of testing American Water's goodwill for impairment. The last analysis performed by Duff & Phelps in 2011 showed that the water utility industries' cost of equity was ** ___ . ** Although Staff did not discover an updated analysis from Duff & Phelps or any other financial consultant hired by American Water, it stands to reason that an update of the water utility industry's cost of equity by valuation experts would show a cost of equity that is lower, and therefore supports Staff's position that the cost of equity for water utilities is likely in the 6% to 7% range.

H. Fair and Reasonable Allowed ROE for MAWC Considering Allowed ROEs for Ameren Missouri and KCPL

Staff believes determining a fair and reasonable allowed ROE for MAWC must consider this Commission's recent decisions during the Ameren Missouri and KCPL rate

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cases because the economic and capital market environments have not changed drastically since the Commission made those decisions. Staff has already discussed its analysis of the utility debt and equity markets, but Staff has not expanded on the relative differences between the electric and water industries. Staff evaluated a wide range of data to estimate a fair allowed ROE for MAWC as compared to those recently allowed for Ameren Missouri and KCPL, but Staff relied primarily on comparing its multi-stage DCF results for the water utility proxy group to an update to its multi-stage DCF analysis of the refined electric utility proxy group Staff used in the recent Ameren Missouri, Empire and KCPL rate cases.

1. Update of multi-stage DCF analysis of the refined electric utility proxy group

Staff performed an updated multi-stage DCF analysis of the refined electric utility proxy it used in the 2014 electric utility rate cases for Ameren Missouri, Empire and KCPL. Please see Schedules 16-1 through 16-4 for this updated analysis. Staff's multi-stage DCF analysis for the electric utility industry assumed a perpetual growth rate range of 3% to 4% based on Staff's compilation and calculation of rolling 10-year compound growth rates for the electric utility industry for the period 1968 through 1999. Staff also used a perpetual growth rate of 4.4% based on the assumption that the electric utility industry could grow in perpetuity at the same rate as the expected long-term growth rate in the U.S. economy as measured by GDP. Based on stock prices for the three months through November 2015, Staff's multi-stage DCF analysis of the electric utility proxy group indicates a cost of equity of 7.36% to 8.13% using the 3% to 4% terminal growth rates and 8.44% using GDP for a terminal growth rate. At the time Staff had recommended the Commission reduce Ameren Missouri's allowed ROE by 25 to 75 basis points, the estimated multi-stage DCF cost of equity for this same proxy group was 7.56% to 8.32% using terminal growth rates in the range of 3% to 4%. Using GDP for a terminal growth rate, Staff had estimated the COE for the electric utility industry at 8.63%. These lower cost of equity estimates now as compared to the fall of 2014 are supported by the valuation ratios Staff discussed earlier in this testimony that show lower dividend yields now compared to the fall of 2014 and higher P/E ratios now compared to the fall of 2014.

Staff believed it was clear at the time of the Ameren Missouri rate case that there was sufficient evidence to indicate that the cost of equity had declined by 25 to 75 basis points

since 2012. In the subsequent Empire and KCPL rate cases, Staff's continually updated analysis indicated that the cost of equity could be as much as 100 basis points lower than it was in 2012, which would have justified an allowed ROE of below 9%. However, Staff chose to recommend all of Missouri's electric utility allowed ROEs be set based on Staff's initial estimate of a 25 to 75 basis point decline.

Considering the fact that an update of Staff's multi-stage DCF analysis from the electric utility cases implies that the cost of equity is still below at least the level it was at when Staff performed its analysis in the Ameren Missouri rate case, Staff believes the macro environment supports an allowed ROE consistent with what the Commission believed was fair and reasonable just a few months ago. However, the crucial question the Commission has to answer is whether MAWC's allowed ROE should be different because it is a water utility rather than an electric utility. Staff's multi-stage DCF analysis on the water utility industry indicates that the cost of equity for the water utility industry is lower than it is for the electric utility industry. In fact, although Staff's multi-stage DCF analysis on the water utility industry assumed a terminal growth rate consistent with long-term expected GDP growth, an assumption Staff would not concede to in the electric cases, Staff's multi-stage cost of equity estimate for the water utility industry was still lower than that of the electric utility industry by approximately 35 basis points. If Staff uses GDP as the perpetual growth rate for both industries, this would imply that the water utility cost of equity is approximately 100 basis points lower than that of the electric utility industry. However, considering the fact that the water utility industry tends to have lower dividend yields and higher projected growth rates than the electric utility industry, Staff believes it is appropriate to use a slightly higher growth rate for the water utility industry. Therefore, Staff believes the 35 basis point difference is reasonable given Staff's consideration of a higher growth rate for the water utility industry. Because it's impossible to precisely measure the cost of equity, Staff recommends the Commission authorize a ROE for MAWC that is 25 basis points below the 9.5% ROEs recently allowed for Missouri's electric utilities.

J. Conclusion

A just and reasonable rate is one that is fair to the investors and fair to the ratepayers. Fairness to the ratepayers means rates that are not one penny more than is necessary to be fair to the shareholders. Fairness to the shareholders means rates that will produce revenues, on

an annual basis, sufficient to cover MAWC's prudent cost of service, which includes an allowed ROR. Staff believes an allowed ROE in the range of 8.50% to 9.50% is fair and reasonable for MAWC, but considering all of the information Staff has reviewed and considering that some information does not support a conclusion that the cost of equity for water utility companies would be that much lower compared to electric utilities, Staff recommends the Commission authorize an ROE of 9.25%.

Using an allowed ROE range of 8.50% to 9.50% results in an allowed rate of return range of 6.94% to 7.41% (*see* Schedule 17). Using the point recommended allowed ROE of 9.25%, results in an allowed rate of return of 7.29%. This was calculated by applying an embedded cost of long-term debt of 5.69%, embedded cost of preferred stock of 8.64%, an average cost of short-term debt of 0.31% and an allowed return on common equity range of 8.50% to 9.50%, with a point recommendation of 9.25% to a capital structure consisting of 46.99% common equity, 0.16% preferred stock common equity, 1.41% short-term debt and 51.43% long-term debt. Although this is above what Staff estimates to be the cost of equity to be in the current capital market environment, this allowed ROE is fair and reasonable considering the recent allowed ROEs the Commission authorized Ameren Missouri and KCPL.

Staff Expert/Witness: David Murray

VI. Rate Base

A. Plant in Service and Depreciation Reserve

1. Plant in Service

Accounting Schedule 3, Plant in Service, reflects the rate base value of MAWC's plant in service for each district as of September 30, 2015, by account. The plant in service for each district also includes the appropriate allocated portion of corporate plant.

Staff recommends adjustments to address an issue found within their plant ledgers. Staff's review identified several sewer districts which report plant balances in accounts that are unique to water districts. Staff recommends that this issue be addressed by reassigning the inappropriate balances to the appropriate accounts on MAWC's books and records going forward.

Staff Expert/Witness: Brian Wells

2. Depreciation Reserve

The accumulated depreciation reserve represents the sum of all depreciation accruals, net of cost of removal and salvage, which has been recorded on plant placed in service. The value of the accumulated depreciation attributed to MAWC's plant in service will be netted with the total plant in service amount for the purpose of determining rate base.

Accounting Schedule 4, Depreciation Reserve reflects the adjusted rate base value of MAWC's depreciation reserve for each district as of September 30, 2015, by account. The plant in service for each district includes allocated corporate plant as discussed above. The depreciation reserve for each district also includes allocated corporate accumulated depreciation.

Staff recommends that adjustments be made in certain districts for land accounts in which the Company had reported depreciation reserve. As land is not a depreciable asset, Staff recommends that these reserve amounts be removed.

Staff Expert/Witness: Brian Wells

B. Contributions in Aid of Construction

Contributions in Aid of Construction (CIAC) include all developer-donated plant or any other plant received by the utility at zero cost. CIAC could also include funds received from the developers for the right to hook up to the system in the form of a tariffed CIAC charge. CIAC carry no obligation for MAWC to repay or refund the money to developers or customers. Staff has reflected the net CIAC balances (CIAC less CIAC reserve) on Accounting Schedule 2, Rate Base, as of September 30, 2015, for all of MAWC's districts.

During its audit, Staff discovered that MAWC's investment records reflected a negative overall rate base for the Saddlebrooke Sewer District and Saddlebrooke Water District. For purposes of its direct filing, Staff made adjustments to set rate base at zero for these districts. Staff will continue to investigate the investment records for these districts.

Staff also determined that the depreciation rates that MAWC applied to CIAC balances in all of their sewer districts were not the current, Commission-authorized depreciation rates. Staff has reflected the appropriate depreciation rates in the calculation of CIAC amortization. This is addressed by Staff witness John A. Robinett in Section VIII.B. of this Report.

Staff Expert/Witness: Brian Wells

C. Prepayments

Prepayments are payments made in advance of the period for which a utility receives a benefit from the purchased good or service and typically relate to such expenses as leases, insurance, and income taxes and other taxes. Prepaid amounts require use of investors' funds and, accordingly, are included in rate base. Staff used a thirteen-month average of prepayments balances to be included as an addition to rate base for all MAWC districts. The thirteen months used for the average included the month-end balances from September 2014 through September 2015.

Staff Expert/Witness: Brian Wells

D. Materials and Supplies

MAWC maintains an inventory of materials and supplies that are used in the construction, operation and maintenance of utility plant but are not directly assignable to specific plant accounts. For the purpose of setting rates, these items should be included in the calculation of rate base because they are typically purchased with investors' funds. For most districts, Staff used a thirteen-month average of materials and supplies inventory level to be included as an addition to rate base. The thirteen months used for the average included the month-end balances from September 2014 through September 2015. For the districts of Tri-States and Maplewood/Riverside/Stonebridge, Staff identified a trend in the monthly data for materials and supplies inventory. Therefore, Staff determined that it was appropriate for those two districts to annualize the materials and supplies at the inventory level as of September 30, 2015, rather than utilizing a thirteen-month average.

Staff Expert/Witness: Brian Wells

E. Other Post Employment Benefit Costs (OPEB's)

1. Pension/OPEB Tracker

Staff, MAWC, and other parties entered into a Non-unanimous Stipulation and Agreement in Case No. WR-2007-0216 that addressed the ongoing ratemaking treatment for qualified pension costs (FAS 87) and Other Post Employment Benefit (OPEB) costs (FAS 106). This agreement and subsequent agreements in MAWC rate cases authorized MAWC to use an accounting mechanism ("tracker") that would track the difference between the pension and OPEB expense included in the company's rates and the amount of pension

and OPEB expense recorded on MAWC's books and funded by it. Consistent with those agreements, the difference between the annual pension and OPEB expense incurred by MAWC and the amount of pension and OPEBs expense included in rates, as accumulated in the tracker, have been included in rate base and amortized over a period of five years as an addition or reduction to pension and OPEBs expense. Staff's combined MAWC trackers for pension and OPEBs as of September 30, 2015 is an asset of $12,953,239.

The Company's accrued pension asset as of September 30, 2015 is $14,653,705. This total represents the amount of pension funding MAWC has made to date in excess of its minimum ERISA requirement. Prior pension agreements allow MAWC to fund additional pension amounts above the minimum ERISA level under certain conditions.

Staff will review the pension and OPEB tracker and accrued pension asset balances during MAWC's true-up filing.

Staff Expert/Witness: Kofi A. Boateng, CPA, CIA

F. Customer Advances

Customer advances are funds provided by individual MAWC customers to assist in the cost of constructing and extending mains to facilitate the provision of water and/or sewer service to them. These funds represent interest-free money to MAWC. Since MAWC has already been reimbursed for the plant items associated with the construction and/or extension, it should not receive a rate base return on these items. Therefore, it is appropriate to include the accumulated total of these funds as an offset to rate base. The amount of customer advances reflected on Accounting Schedule 2, Rate Base, is the balance as of September 30, 2015, the end of Staff's test year update period. Staff has included in rate base MAWC's customer advances for all the districts, including the recently acquired systems.

Staff Expert/Witness: Brian Wells

G. Cash Working Capital (CWC)

Cash Working Capital (CWC) is a rate base component that represents a measurement of the amount of funds, on average, required for the payment of a utility's day-to-day expenses, as well as an identification of whether a utility's customers or its shareholders are responsible for providing these funds in the aggregate. If, on average, a utility has the funds to pay an expense necessary to the provision of service before customers provide payment to

the utility, it is the shareholders who are the source of funding, indicating a requisite increase to the rate base. Alternatively, if, on average, the utility pays expenses necessary for the provision of service only after receiving payments from customers, the ratepayers have provided the requisite funding to pay day-to-day expenses before payment is required on the expenses. Ratepayers are compensated for this funding through a reduction to rate base.

To determine the necessary amount of CWC to be included in the calculation of rate base, Staff performs a lead/lag study. In regard to revenues, a lead/lag study analyzes the timing differences between when the utility provides a customer with service, when a utility generates a bill, and when the utility receives revenue for the service it provides. This overall "revenue lag" is divided into service, billing, and collections lag components. The lead/lag study analysis also involves calculation of the lags from when a good or service is provided to the utility and when the utility pays the invoice for the goods and services, which is called an "expense lag." To determine the amount of CWC to be included in rate base, each expense lag is subtracted from the revenue lag, which provides a net lag. In Staff's calculation of CWC, the net lag is multiplied against an annualized level of each expense, providing a cash requirement for each expense lag. The resulting net total of these cash requirements will either be positive or negative. A positive CWC requirement indicates that, in the aggregate, the shareholders provided the working capital needs during the test year. A negative CWC requirement indicates that, in the aggregate, the ratepayers provided the needed working capital during the test year and paid for the related water and/or sewer expenses before receiving service from MAWC.

In this rate case proceeding, Staff did not conduct a full lead/lag study to determine the CWC requirement, but MAWC performed such a study internally and provided the study for Staff's review in response to DR No. 0216. For purposes of this rate proceeding, Staff has accepted some elements of MAWC's lead/lag study, but made adjustments to other lead/lag components for the reasons discussed below.

Staff utilized the study data to calculate the revenue and expense lags for the St. Louis Metro district, which includes St. Louis, St. Charles, and Warren County, while combining all other districts.

Staff has concerns with all 3 individual components of the revenue lag calculations. The service lag was determined from utilizing actual billing data from the lead/lag study, but

the billing data is sourced only from December 2014. During a meeting held on November 20th where Staff and MAWC personnel discussed CWC issues, MAWC stated that utilizing solely the month of December 2014 for billing data resulted in a 'cleaner' sample of actual customer payment practices. Staff has calculated a billing lag of 2.09. This lag is a calculated average of the billing lags from the other large, comparable, and regulated Missouri utilities under the Commission's jurisdiction, such as Ameren Missouri, Kansas City Power & Light, Laclede Gas, MGE, and Empire Electric. MAWC's Direct position for billing lag for the St. Louis Metro district is a 5.56 day lag, and all other districts were filed at a 4.81 day lag. Staff does not agree with these unnecessarily high lags for the billing process, ** _____ _____ . ** Also, as discussed above, these billing lags are far higher than comparable lags for other large Missouri utilities. Staff also has concerns about the collections lag. During the same meeting held on November 20th as mentioned above, MAWC discussed with the Staff the recent issues with the billing of customers in its Stonebridge district.[41] Some of these issues related to the impact of MAWC's Business Transformation process, the swapping out of customer meters, and the "winter averaging process" with certain seasonal customers. These issues were not fully resolved until the end of the first quarter in 2014, which could materially impact the collection lag calculation. Staff received a response to Staff DR No. 0269 seeking all district billing data for 2015, but not in time to include an analysis in Staff's direct filing. Staff wants to review data that is unaffected from billing errors to see if there was an effect on all components of the revenue lag. Therefore, future adjustments could be possible to the revenue lag.

Staff has made the following adjustments to MAWC's expense lead/lag calculations:

- Staff has made corrections to some of MAWC's service period assumptions for some expense lags in response to MAWC's reply to Staff DR No. 0261.
- Staff calculated 401(k) payment expense as a separate lag; MAWC's Direct workpapers included 401(k) expense within the miscellaneous cash vouchers.[42]

[41] See the Commission's complaint case, No. WC-2014-0138. See also Staff witness Deborah Ann Bernsen testimony for a brief synopsis of the complaint case timeline and issues.

[42] "Miscellaneous cash vouchers", "miscellaneous lag", or "cash vouchers" is a term utilized for the aggregate of expenses in the cash working capital expense lag calculation that are not calculated as an individual annualization multiplied by a lag. These lead/lag study paid expense invoices are aggregated to make a single "miscellaneous" expense lag.

NP

- The expense lags for long-term and short-term debt have been combined into a single expense lag under 'interest expense.'

- The expense lags for pensions and OPEBs have been combined into a single expense lag under 'Pensions & OPEBs.'

- Staff removed automotive rentals from the calculated 'Transportation' lag and combined them with the 'Rents' lag. All other 'Transportation' lags were placed in the miscellaneous cash voucher lag calculation.

- Preferred stock dividend payments were not included in the expense lag calculations; the capital structure calculations take preferred stock payments under consideration in the ratemaking process. The payment of preferred stock is a benefit purely obtained by shareholders and should not affect ratepayer rates.

- While Staff is aware that MAWC has reported a net operating loss for federal and state taxes, the ratemaking calculation does calculate a tax liability for MAWC on a normalized basis. For the purposes of ratemaking, Staff has included an expense lag for federal, state, and city taxes based on a quarterly payment schedule.

Finally, Staff has chosen to use its "miscellaneous cash vouchers" lag calculation to apply to MAWC's Service Company expenses, instead of using the specific lag calculated for this expense item by MAWC. Since Case No. WR-2003-0500, Staff has taken issue with the Service Company requiring prepayment from MAWC of invoices paid to the Service Company; this results in MAWC incurring costs prior to the its districts' receipt of any benefit of the related services. The vast majority of the goods and services that MAWC receives from unaffiliated vendors are paid by MAWC in "arrears;" i.e., after the goods and services are received. Staff believes that the requirement that MAWC prepay amounts due to the Service Company is solely a result of the affiliated relationship of MAWC to the Service Company. Staff continues to disagree with MAWC's request for a "negative" expense lag to be reflected in its CWC allowance for Service Company expenses, as it would result in MAWC's customers paying a higher return on rate base than would be required under normal business billing practices.

Staff Expert/Witness: Sarah Sharpe

H. Tank Painting Tracker

The tank painting tracker was established in the *Non-unanimous Stipulation and Agreement* approved by the Commission as part of MAWC rate case, Case No. WR-2007-0216 and was continued through provisions of subsequent agreements that were approved by the Commission in MAWC's next three rates cases: Case Nos. WR-2008-0311, WR-2010-0131, and WR-2011-0337. The tracker measures the amount of actual costs for tank painting and inspection expense incurred by MAWC against a base level, which is established by a previous rate case. The tracker is a two-way mechanism that can result in either a regulatory asset or liability balance for MAWC's tank painting and inspection expenses. All increases or decreases in actual tank painting and inspection expense in a given year following the establishment of a base level of corresponding expense are applied to determine the balance of the regulatory asset or liability. The tracker was intended to address all changes in tank painting and inspection costs through the effective date of rates established in the next regulatory proceeding (which would be this proceeding), with the continuation of the tracker to be addressed and evaluated in that same subsequent proceeding. In MAWC's last rate case, the base level was set at $1,300,000. As of September 30, 2015, the tracker has resulted in an overall regulatory asset balance of $828,602, meaning that MAWC's actual costs for tank painting and all inspections since its inception are greater than what it has recovered in rates. At December 31, 2011, the true-up cutoff in the last MAWC rate case, Case No. WR-2011-0337, this tank painting tracker regulatory asset balance was $1,347,465. Therefore, since time of the last rate case, MAWC has recovered more in rates than it has actually expensed for tank painting and inspections.

Staff proposes an adjustment to amortize the current regulatory asset balance of $828,602 over a five year period, and to include the unamortized balance of the regulatory asset in rate base.

Staff recommends that this Commission discontinue the tank painting tracker on a going forward basis. Tank painting and inspection expenses should not qualify for a tracker because the timing of this expense is generally under the Company's control. The Company should be able to maintain the costs at a relatively constant level with proper planning.

Additionally, it is Staff's position that tank painting costs and inspection expenses are not significant enough to rise to a level that merits the extraordinary accounting and rate treatment of continuous tracking.

Staff Expert/Witness: Jason Kunst

I. Accumulated Deferred Income Taxes (ADIT)

Staff has included the ADIT balance as of September 30, 2015, in the amount of $283,239,542 in rate base. See Section VIII.G. Current and Deferred Income Tax for a detailed discussion on deferred income taxes.

Staff Expert/Witness: Kofi A. Boateng, CPA, CIA

VII. Allocations and Service Company Costs

A. Corporate Allocations

1. Introduction

American Water Works Company, Inc. ("American Water") is headquartered in Voorhees, New Jersey, and its subsidiaries serve approximately 15 million customers in 45 states and in one Canadian province. American Water performs many functions and activities on a consolidated or centralized basis for many of its regulated and unregulated subsidiaries. These consolidated or centralized functions are carried out for the American Water owned subsidiaries by American Water's wholly-owned subsidiary American Water Works Service Company, Inc. ("Service Company"). Through a process of direct assignment and allocation, Service Company employees' time and all other related costs are ultimately charged to the American Water owned utility subsidiaries receiving the services. In addition to the Service Company, American Water Capital Corporation (AWWC) was created to provide a single source of long and short-term debt capital for American Water and its utility subsidiaries. Service agreements exist between MAWC and both the Service Company and AWWC.

The following subsidiaries or affiliated entities currently receive direct or allocated charges from the Service Company:

Regulated Entities

California American Water Company	Michigan-American Water Company
Hawaii American Water Company	New Jersey-American Water Company
Illinois American Water Company	New York-American Water Company
Indiana American Water Company	Pennsylvania-American Water Company
Iowa American Water Company	Tennessee-American Water Company[43]
Kentucky-American Water Company	Virginia-American Water Company
Maryland-American Water Company	West Virginia-American Water Company

Unregulated Entities

Contract Operations Group	American Water Resources
Military Services Group	Laurel Oak Properties
Homeowner Services Group	American Water Works Service Company
Terratec Environmental Ltd.	American Water Capital Corporation

Services performed by the Service Company are grouped into following costs centers, each with its own list of services provided: corporate, customer service center, shared services center, divisional offices, information technology service centers, and Belleville Lab.

The Service Company allocates expenses to the American Water subsidiaries. MAWC's Cost Allocation Manual (CAM), categorizes the Service Company expenses as follows: labor, support, labor-related overheads, office expense, and vouchers/journal entries. The Service Company employees charge their time and expenses to each one of the affiliate companies either directly or indirectly. The Service Company employees provide information to the Service Company to assign expenses to affiliates. Such information includes the affiliate company number (if transaction is a direct charge), or a formula number (if transaction is allocated), the number of hours the employee worked, and the appropriate number of non-labor charges. This method allows for direct charges to both regulated and non-regulated entities when the employee can clearly identify the hours spent providing service to a specific affiliate.

American Water uses a methodology that allocates costs to both its regulated and non-regulated companies. When it is not practical for a Service Company employee to

[43] Tennessee American also serves customers that are located in northern Georgia.

directly charge a given company the actual time spent on a task, employees log their hours on a time sheet that includes various allocation billing formulae. The billing formula charges either whole or partial hours among the regulated and non-regulated American Water subsidiaries.

When a Service Company employee provides services that benefit both regulated and non-regulated entities, the employee chooses a "Tier-One Allocation Formula" as listed in the CAM to allocate the charges to both regulated and non-regulated entities. An employee who only performs services for regulated companies uses a Regulated Formula based on the number of customer for a given subsidiary. An employee providing services to non-regulated companies only charges his or her time "directly" to that Company.

Tier-One Formulas rely on various criteria, including: revenues, employees, and plant investment, and others. Some of the formulas are derived from a combination of several of these criteria, while others consider only one criterion such as the number of employees. The Service Company employee then chooses the formula that matches the service provided. For example, employees in payroll choose a formula based on the number of employees.

Divisional cost centers can charge other affiliates for costs incurred. This type of charge occurs if a particular divisional office has given expertise that is lacking in another division. An employee from that divisional office may perform tasks for other divisional offices, and directly charge his or her time to the corresponding division. For example, if a plant project is under construction by Maryland-American Water Company in the Mid-Atlantic Division, but the only engineer familiar with that type of plant is located in the Missouri-American Division, he or she may provide services to Maryland-American Water Company and charge his or her time directly to that entity.

Based upon the information provided by MAWC, Staff has not proposed any changes to MAWC's method for allocating Service Company expenses.

Staff Expert/Witness: Kimberly K. Bolin

B. District Allocations

MAWC is currently composed of eighteen water operating districts and twelve different sewer operating districts. To determine district specific revenue requirements, all corporate rate base, revenues, and expense amounts must be allocated among these districts. MAWC has proposed to allocate the corporate costs between the districts with more than

3,000 customers by using the appropriate allocation factor for each cost. MAWC uses twelve allocation factors, such as number of customers, number of employees, revenue, net plant investment, etc., to allocate rate base, revenue and expense amounts among the districts. For operating districts with fewer than 3,000 customers, MAWC has chosen to assign $20 annually per customer for total allocated corporate costs. MAWC did not apply any of the allocation factors to determine the amount of corporate costs to allocate to the "small" districts.

For this case, Staff agrees with MAWC's proposed allocation methods for allocating corporate costs to MAWC's "large" districts (though with more than 3,000 customers). However, Staff allocated corporate costs to all districts based upon the same allocation factors, with no difference in allocation methodology between the small and large districts. Staff did not assign an annual per customer limit for corporate allocations to small districts as MAWC has proposed for this rate case.

Staff Expert/Witness: Kimberly K. Bolin

VIII. Income Statement

A. Revenues

1. Introduction

The largest component of operating revenues results from rates charged to MAWC's metered and unmetered water and sewer service customers. A comparison of operating revenues with cost of service is fundamentally a test of the adequacy of the currently effective rates. If the overall cost of providing service to customers exceeds operating revenues, an increase in the current rates MAWC charges its metered and unmetered customers for service is required.

One of the major tasks in a rate case is not only to determine whether a deficiency (or surplus) between cost of service and operating revenues exists, but also to determine the magnitude of any such deficiency (or surplus). Any deficiency (or surplus) identified can only be addressed by adjusting Missouri retail rates (i.e., rate revenues) prospectively, on a going-forward basis.

Staff Expert/Witness: Erin M. Carle

2. The Development of Rate Revenue in this Case

The objective of this section is to explain Staff's determination of annualized, normalized test year usage and revenues by rate class.

The intent of Staff's adjustments to test year Missouri usage and rate revenues is to determine the level of revenue that the Company would have collected on an annual basis, based on information "known and measurable" at the end of the test year (in this case, updated through September 30, 2015).

The two major categories of revenue adjustments are known as "normalizations" and "annualizations." Normalizations address test year events that are unusual and unlikely to be repeated in the years when the new rates from this case are in effect. Annualizations are adjustments that re-state test year results as if conditions known at the end of the test year had existed throughout the entire test year.

Staff Expert/Witness: Erin M. Carle

3. Regulatory Adjustments to Test Year Sales and Rate Revenue

a. Normalization of Customer Water Usage

A key component in determining if an increase in rates is needed is calculating annualized revenues. Staff witness Erin M. Carle provides Staff's explanation of the method Staff utilizes in determining annual revenues.

One of the factors used in determining annual revenues is customer usage. In this proceeding, Staff developed customer usage on a per day basis for residential customers in the various service areas in which MAWC provides metered water service. Two service areas, Rankin Acres and White Branch, do not have metered rates due to the expense of installing meters.

Staff reviewed historical data provided in MAWC responses to Staff DR Nos. 0235 and 0239. These data requests provided Staff with monthly customer usage per service territory (DR No. 0235) and with monthly customer counts per service territory (DR No. 0239).

Staff determined that the most reasonable method to determine annual customer usage was to use a five-year average of usage for the period October 2010 – September 2015.

In certain service territories, MAWC did not have five years of data so Staff used an average of the available data provided.

The method employed by Staff is a reasonable approach that uses actual data to support an annualized level of usage. Averaging the data over the most recent five-year period represents reliable data and provides evidence of recent trends in customer usage. Many factors, such as more efficient appliances, conservation, and lawn sprinkling/irrigation, impact water usage. These factors change over time; therefore, using the most recent five years of data provides for a reasonable determination of customers' usage habits. Furthermore, Staff's utilization of each service area's unique data is reasonable because the usage characteristics of each service territory are different from other service territories.

Based on Staff's determination of customer usage per day, Staff witness Carle calculated an annual amount of revenues and the appropriate commodity rates.

Staff's recommended usage per customer for the residential customers by service area is attached to this Report as Appendix 3, Schedule JAB-d1.

Staff Expert/Witness: James A. Busch

b. Revenues Annualization

Staff's annualized revenues for each of the Company's operating districts is the sum of the minimum charge revenues and the volumetric charge revenues at the currently approved tariff rates. The difference between these revenues and those billed during the test year provided the amount for the revenue adjustments.

Staff developed the minimum charge revenues by first multiplying the number of customers (or meters) as of September 30, 2015, to each meter class by the applicable minimum charge as ordered in Case No. WR-2011-0337, the Company's last general rate proceeding. The product of the number of customers (or meters) multiplied by the applicable minimum charge was then multiplied by the number of billing periods in a year, four for quarterly customers and twelve for monthly billed customers, to produce the annualized minimum charge revenues for each customer class.

Staff developed the annualized and normalized volumetric (consumption) charge revenues based on a normalized usage applied at the current volumetric rate per gallons. Staff witness James A. Busch, of the Staff's Water and Sewer Department, developed and provided the normalized average gallon usage per customer per day for residential customers for all

operating districts. For Commercial, Industrial, Other Public Authority (OPA) and Other Water Utilities (Sale for Resale) customers, Staff developed an average gallon usage per customer per day by using either a five-year average, or the value for the 12-month ending at September 30, 2015, depending on if there was an upward or downward trend present. Staff multiplied the average gallon usage per customer per day by the average days per year (365.25) and the number of customers, to determine the total annual usage or consumption. For St. Louis, the Sales for Resale and City of Kirkwood revenue categories are annualized through the test year ending December 31, 2014. Once updated information is provided to the Staff, these values will be adjusted at true-up. The total normalized usage or consumption was then multiplied by the applicable tariff rate per gallon for each usage block, to determine the normalized volumetric revenues. Staff relied on the Company's test year usage per block in thousand (1,000) gallons to allocate the total volumes into the various blocks for which it applied the applicable volumetric rate per gallon.

Staff has eliminated all unbilled revenues booked by the Company to the test year revenues in its revenue annualization computation. This ensures that only 365 days of revenue is included in the revenue annualization calculation and to reflect revenues stated on an "as billed" basis. Unbilled revenue on the books of the Company recognized sales of electricity that have occurred, but have not yet been billed to the customer. Therefore, it is necessary for Staff to remove unbilled revenue in order to reach an accurate revenue requirement based upon electricity sales billed to, and revenues collected from, Missouri ratepayers. For the purpose of this rate case, Staff has also removed any impact of the ISRS to the annualized revenues. These surcharges will expire and be reset to zero at the time new rates are established by the Commission in this rate proceeding.

Staff Expert/Witness: Erin M. Carle

c. Other Revenues

MAWC's other revenues categories include funds received for the following items: temporary service, late payment charges, rents, collection for others, non-sufficient funds check charges, application/initiation fees, the provision of usage data to other entities, reconnection fees, frozen meter fees, after hours charges, and miscellaneous service. Staff reviewed the totals for each of these other revenue categories for a three-year period. Based upon this review, the Staff determined whether the three-year average or the test year amount

was most representative as a going forward level of revenue for each of these categories. If Staff noted that an upward or downward trend was present, then Staff used the test year level. If the other revenues levels for one particular category fluctuated from year to year, then Staff employed a three year average to normalize that particular category of revenues. Staff performed this analysis for all other revenue categories for all MAWC's operating districts. Staff has submitted DR No. 0334, referring to the contract between MAWC and St. Louis Metropolitan Sewer District. Staff also submitted DR Nos. 0325 and 0325.1 seeking information regarding possible changes in other revenue categories that may need to be addressed as part of true-up. Upon receipt of responses from MAWC regarding these data requests, Staff may make further adjustments during the true-up portion of this case.

Staff Expert/Witness: Erin M. Carle

B. Depreciation

1. Recommendations

Staff recommends the continued use of the ordered depreciation rates from Case Nos. WR-2011-0337 and SR-2011-0338 as shown in Appendix 3, Schedule JAR(DEP) - d1 and Schedule JAR(DEP) - d2. Staff is assigning a 5% depreciation rate for accounts 391.25, Computer Software and 391.26, Personal Computer Software, because Staff suspects these accounts contain the plant-in-service related to the Business Transformation[44]. Staff's 5% recommendation is consistent with the requirements of Paragraph 19 of the Stipulation and Agreement approved by the Commission in Case No. WR-2011-0337. Based on a review of testimony and work papers, the current ordered rates yield a slightly higher depreciation expense by account than MAWC's Aggregate Remaining Life rate recommendation.

Staff has concerns related to MAWC's request to adopt Remaining Life Depreciation Accrual methods and General Plant Amortization methods. Staff issued data requests to further investigate these issues on December 16, 2015. Staff considers Remaining Life Accrual methods to be subject to accuracy issues related to retirement dates. General Plant Amortization methods are a means of accounting that no longer require historical analysis to provide life rates that reflect the useful life of plant. Staff recommends the more accurate use

[44] Staff has issued DR No. 0375 filed December 16, 2015, seeking information related to the booking of Business Transformation across all water and sewer districts.

of Mass Property Depreciation Rates, because the return of investment is actually based on historical data related to the useful life of plant dollars in an account. Staff's concerns related to General Plant Amortization methods and Remaining Life Accrual methods are discussed in more detail in subsequent paragraphs.

Staff toured several of the MAWC water treatment facilities in this case, including Jefferson City water facilities on September 16, 2015, Branson facilities on October 5th, Joplin on October 6th, St. Joe and Platte County on October 12th, and St. Louis Facilities on October 28th and 29th. Part of the St. Louis tours involved a review of MAWC's Plant accounting software. As part of that review, Staff asked for the continuing property records of facilities in the St. Louis area in order to conduct a limited physical inventory check of the St. Louis water treatment facilities' accounting records. During its limited physical inventory check, Staff asked the plant personnel providing the tour to help locate randomly selected retirement units. No significant issues were discovered in this limited physical inventory check.

2. Sewer CIAC Rates

On December 17, 2015 Staff discovered that MAWC is calculating CIAC depreciation expense in its sewer district by using water CIAC depreciation rates. Specifically for Sewer CIAC, Staff recommends the CIAC accrual rate match the current ordered depreciation rates of 2% for accounts 352.1 Collection Sewers (Force), and 352.2, Collection Sewers (Gravity). Staff intends to further investigate this issue and have a position on adjustments to reflect in Rebuttal Testimony.

3. Remaining Life

Remaining Life Depreciation Accrual methods are used to collect net salvage and original cost of investment over an asset's remaining projected useful period. Remaining Life rates can be used to speed up recovery when accounts or facilities are lagging in accruals and retirement of that asset is known and imminent. However, the reasonableness of Remaining Life rates on a particular asset or account is highly dependent on the accuracy of predicting exactly when individual facilities will be retired. This generally accepted depreciation procedure is most frequently used on facilities nearing the end of their useful life, but it may be difficult or impossible to reasonably estimate retirement dates for long-lived assets that are not otherwise approaching the end of useful life. This analysis is further complicated by

assumptions used in the economic analysis typically undertaken in the decision of whether to repair or retire the sort of long-lived assets that are commonly part of a regulated utility's rate base. For example, the economics of whether to repair or retire a particular pump can vary wildly based on the availability of parts and knowledgeable service personnel.

Staff issued DR Nos. 0378 and 0380 on December 17, 2015, specifically asking for the other state jurisdictions where Remaining Life Depreciation rates had been requested and ordered. In Missouri, only Parkville Water Treatment Facility has been indicated by MAWC as nearing the end of its useful life. In Case No. WR-2011-0337, MAWC witness Mr. Kevin Dunn testified that this facility was expected to retire in May of 2018.[45] Specifically, Mr. Dunn discussed two separate and distinct studies, the first of which was performed by Burns and McDonnell in 2000. This study estimated the useful remaining life in 2000 to be ten years. Had the Commission approved Remaining Life in this 2011 case, five years of additional accrual would have taken place as of the current date, with two and a half years of life still projected. The other study indicated in Mr. Dunn's Testimony from WR-2011-0337 was conducted in 2008, 2 years prior to the projected retirement date of the Burns and McDonnell study. The 2008 study was performed in-house and indicated that the plant would retire in 2018. In Mr. Dunn's testimony page 19, he indicated "The building of a new water treatment plant on a new site could take 5-6 years to purchase land, obtain funding and proper permitting of the plant and site, thus fitting the 2018 retirement date." At the time of Staff's facility tour on October 12, 2015, which is half-way into the 5-6 year window to build a new facility by summer 2018, the plant manager indicated land had not been purchased and no final design had been approved. This example demonstrates the inaccuracy of Remaining Life Depreciation rates in determining retirement dates for individual facilities. Staff therefore recommends the current ordered rates for MAWC remain in effect.

4. General Plant Amortization

The depreciation study supplied by MAWC does not take a historical look at the general plant accounts, with the exceptions of Account 390, Structures and Improvements, Account 392 and its subaccounts for Transportation Equipment, and Account 396, Power Operated Equipment. The reason MAWC's study does not look at historical data is due to the

[45] WR-2011-0337 EFIS item # 8 pages 16-19.

recommendation of General Plant Amortization accounting. With General Plant Amortization accounting, there is no need to perform a historical study, because retirements will occur by vintage year[46] after a determined amount of time, "the amortization period" for individual accounts. Under the General Plant Amortization method, or Vintage Amortization method, only two values matter: the total additions for an account in a vintage year and the amortization period over which the original investment is to be recouped. General Plant Amortization threatens the ability to perform any sort of prudence review of plant added into these accounts without tracking retirement units and original costs. General Plant Amortization does not yield historical data that will differ from amortization period. Under the General Plant Amortization, amortization periods may or may not match the useful life of the assets; it is strictly a retirement of dollars not physical assets. Plant assets may actually retire prior to the amortization period or may survive many years past the amortization period.

Staff's recommendation for Mass Property Depreciation Rates for general plant accounts will more accurately match the experienced life of the dollars in an account to the return of the investment. If the Commission approves MAWC's request for General Plant Amortization, Staff recommends the Commission order MAWC to continue specifying the original cost and associated retirement units for all additions to the accounts where General Plant Amortization accounting treatment will occur.

Staff issued a DR No. 0376 on December 16, 2015 asking for the historical data for the accounts MAWC has requested be shifted to General Plant Amortizations. This data request was filed in order to obtain the information needed to perform an updated study on the experience of additions and retirements for the general plant accounts; these accounts in total in the last year have seen approximately 24 million dollars in retirements that were not studied by the MAWC proposal. MAWC's proposal ultimately would have likely forced these retirements to occur due to the amortization periods versus the in-service date of the assets. In Staff's recommendation of Mass Property Depreciation Rates for General Plant accounts, the retirements that occurred in 2014 will be studied and Staff's position will be updated based on results of the study, which should be included in the answer to DR No. 0376. The Staff-recommended depreciation expense for the General Plant accounts could increase

[46] The vintage year is the first year the plant is placed into service or, in some cases, into inventory.

or decrease based on the answer to this data request; it all depends on if plant assets that were retired in 2014 were long lived assets or short lived.

While Staff does not recommend adoption of the General Plant Amortization method, Staff has made preparatory adjustments on the district level in this case for water and sewer assets related to the potential change from Mass Property depreciation rates to General Plant Amortization method for all general plant accounts, with the exclusions of Account 390, Structures and Improvements, Account 392 and its subaccounts for Transportation Equipment, and Account 396, Power Operated Equipment.

a. General Plant Amortization - Retirements

Staff has had recent experience with regulated Companies requesting General Plant Amortization accounting. In electric utility requests, Staff recommended large amounts of plant be retired that were old vintages still on the books but which exceeded the amortization period. Staff expected to see similar issues at MAWC given its testimony in the previous two rate cases WR-2011-0337 and WR-2010-0131. Staff fully expected in this case to have tens of millions of dollars to retire based on MAWC's request. Staff asked for projected retirements that would occur in DR Nos. 0175 and 0176. Staff's review of the data yielded approximately 5.2 million dollars of retirements across all water districts. On October 28, 2015, during a meeting at MAWC's office located in St. Louis, Staff became aware of approximately 24 million dollars of retirements in the general plant accounts that took place in 2014 (the test year in this case) prior to MAWC's filing of this case, similar to what Staff expected given the recent history with the electric utilities that have requested similar treatment.

Staff's recommendation of the ordered depreciation rates from Case No. WR-2011-0337 used Mass Property Depreciation Rates for the General Plant accounts. Staff anticipates an update to this recommendation upon receipt, review and study of the historical data related to the general plant accounts.

If the Commission adopts General Plant Amortization methods, Staff recommends plant that will reach full accrual as of January1, 2016 be retired as part of this direct case. These retirements affect most of the districts for both water and sewer and will be reflected as adjustments in the accounting schedules to plant-in-service and reserves. These retirements are consistent with MAWC's proposal for General Plant Amortization method and its

recommended amortization periods for each account. Staff has made preparatory negative adjustments to plant-in-service and reserves as provided in the Staff's Accounting Schedules.

b. General Plant Amortization – Amortization Adjustment

In the event that the Commission adopts General Plant Amortization methods, Staff has calculated a pro-forma adjustment to add to the reserves three months of accrual for plant to be retired as of January 1, 2016, from the September 2015 reserve balances. A portion of this adjustment is to account for the timing difference to move all plant not fully amortized to the true-up date of January 31, 2016, accruals; so four months of accruals were calculated for plant not fully accrued as of January 1, 2016. The amortization adjustments are shown as positive adjustments to reserve in the accounting schedules. The adjustment for the plant that does not reach full accrual may change depending on the answer to DR No. 0376 requested on December 16, 2015 related to historical data of additions and retirements in these accounts.

5. Negative Reserve Adjustment

Staff reviewed the plant-in-service and reserve balances for all MAWC water and sewer districts. MAWC has many districts where reserve balances are negative, meaning retirements have exceeded the rate of accrual. Additionally, the asset clean up MAWC undertook in 2014 added to this issue while there was essentially no net rate base effect to the same amount of plant retired being subtracted from reserves; the toll on reserves hit approximately 24 million dollars. Also, since the last case, retirements should have occurred related to the pre-existing computer infrastructure that the Business Transformation System replaced. The recommendation for General Plant Amortization will cause additional plant-in-service to retire, since some plant is already fully accrued or will become fully accrued prior to the true-up date in this case.

Staff recommends adjustments to correct negative reserve balances for accounts in numerous water and sewer districts. Staff recommends the transfer of reserve balances from other accounts within each district to bring the reserve totals on accounts with negative balances back to zero. For most districts, Staff was able to adjust the general plant accounts with funds from other general plant accounts, excluding Account 392 and its subaccounts related to Transportation. This was not possible for Ozark Meadows, which is discussed below. For all negative reserves outside of the general plant accounts, for example, pumping equipment, wells, mains, customer meters, customer services, and distribution piping, Staff

recommends transferring funds from outside of general plant from source of supply accounts, pumping accounts, or transmission and distribution accounts. The sources of these funds vary by district and are provided in the Staff's Accounting Schedules. The majority of these fund sources are transmission and distribution piping accounts, with a smaller portion from pumping accounts.

6. Ozark Meadows Sewer Reserve Issue

Staff reviewed the plant-in-service and reserve balances for all MAWC water and sewer districts and discovered an issue in the reserve balances for Ozark Meadows Sewer District. Ozark Meadows has a negative reserve balance, which means retirements have exceeded the rate of depreciation expense accrual. To correct this issue, because sufficient value is not available in this district to correct the reserve by transferring within the district, Staff recommends a positive $23,555 reserve adjustment to be applied to National Association of Utility Regulatory Commissioners (NARUC) Uniform System Of Accounts (USOA) Account 362, Receiving Wells. This reserve adjustment will be a rate base offset; Staff requests the Commission authorize MAWC to amortize the rate base offset of $23,555 over a five-year period.

7. Saddlebrooke Water & Sewer Net Rate Base

On December 17, 2015 Staff discovered that Saddlebrooke water and sewer districts have negative rate base. CIAC and Reserves are out weighing plant-in-service and the amortized portion of CIAC. Staff intends to investigate this matter further; at this time Staff recommends a retirement of to CIAC to set rate base to $0.

8. Corporate Allocation Adjustment

Staff recommends adjustments in sewer districts to correct inappropriately applied corporate allocations mainly related to computer equipment. Staff reviewed the plant-in-service and reserve balances for all MAWC water and sewer districts. For several sewer districts, MAWC applied corporate allocations incorrectly for computer equipment and software. MAWC booked these corporate allocated computer equipment assets in NARUC USOA accounts for water. Staff recommends transferring plant-in-service and associated reserves to Account 391.2, Computer and Peripheral Equipment. Staff's recommended adjustments for direct testimony are provided in the Staff's Accounting Schedules. However,

Staff may revise these recommendations pending receipt of addition information related to the Business Transformation plant-in-service bookings DR No. 0375 filed December 16, 2015.

9. Business Transformation Plant-in-Service/Reserves Issue

Staff recently became aware that MAWC is not booking the Business Transformation plant in Account 391.4, as required by Paragraph 19 of the Stipulation and Agreement approved by the Commission in Case No. WR-2011-0337. Staff has issued DR No. 0375 filed December 16, 2015, seeking information related to the booking of this asset across all water and sewer districts. The answer to this data request may affect the numerous adjustments previously discussed and cause additional adjustments related accounts 391.1, Computer and Peripheral Equipment, 391.2, Computer Hardware and Software, 391.25, Computer Software- Mainframe, 391.26, Computer Software- Personal, and 391.4, Business Transformation System Initial Investment for the water and sewer districts. Staff is assigning a 5% depreciation rate for accounts 391.25, Computer Software and 391.26, Personal Computer Software. Staff suspects these accounts contain the plant-in-service related to the Business Transformation.

Staff Expert/Witness: John A. Robinett

10. Capitalized Depreciation

Expenses related to construction are accumulated in construction-work-in-progress accounts, and are only eligible to be included in rates subsequent to the completion of the project. The capitalized expenses include depreciation expense associated with assets used in construction such as power operated equipment and transportation equipment. Capitalized depreciation expenses must be subtracted from the depreciation expense calculated using MAWC's total plant-in-service balances in order to prevent double recovery. Therefore, Staff plans to deduct capitalized depreciation from its total depreciation expense in order to arrive at the amount of depreciation expense associated with operations and maintenance related functions. Staff has yet to make this adjustment. Discovery was issued for this item through Staff DR No. 0363, which is due subsequent to Staff's December 23, 2015, direct testimony filing in this rate case. Staff will review the response to this DR for future treatment of capitalized depreciation in MAWC's cost of service.

Staff Expert/Witness: Lisa M. Ferguson

C. Payroll and Benefits

1. Payroll and Payroll Taxes

Staff's total annualized and normalized payroll expense for MAWC and the Service Company is based upon the test year amount ending December 31, 2014, adjusted to address the following: (a) wage increases, (b) changes in employee levels at the end of September 30, 2015, (c) a normalization adjustment for MAWC overtime, (d) use of a September 30, 2015, capitalization percentage, respectively for MAWC and Service Company and (e) ** _____ _____ .**

Staff calculated the annualized level of base payroll for MAWC on an individual basis using the most recent known hourly wage or salary rates as of September 30, 2015. Staff went beyond the test year update period to include contractual raises due to Union employees that went into effect through December 1, 2015. ** _____ _____ _____ _____ **

Staff used the employee levels that existed at September 30, 2015, to complete its annualization for MAWC employees.

Staff's annualized base payroll amount for the Service Company reflects a decrease in employment levels from the beginning of the test year to September 30, 2015. Staff annualized the Service Company payroll based upon employee counts and salaries that were in place as of September 30, 2015. Staff then applied the current average percentage of time the employee charged time to MAWC to determine the appropriate amount of Service Company payroll to allocate to MAWC.

Staff normalized the test year levels of overtime for each MAWC district using a five-year average of overtime incurred. Staff calculated its normalization of overtime by developing a ratio of overtime dollars to straight time payroll dollars and then multiplied this result by Staff's annualized base payroll. The level of overtime that were allocated from the Service Company to MAWC during the test year appeared reasonable; therefore, Staff does not propose an adjustment to Service Company allocated overtime at this time.

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Staff applied the current MAWC and Service Company O&M payroll charge percentages through September 30, 2015, to its total adjusted payroll expense to calculate the expensed amount of payroll.

Staff calculated an annualized amount of payroll taxes for both MAWC and Service Company by multiplying the annualized level of payroll and a portion of incentive compensation by the most recent Federal Insurance Contribution Act (FICA), Federal Unemployment Tax Act (FUTA), and State Unemployment Tax Act (SUTA) payroll tax rates.

Staff's payroll adjustments were distributed to each USOA account by the actual distribution experienced by MAWC through September 30, 2015.

Staff Expert/Witness: Jason Kunst

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Staff Expert/Witness: Sarah Sharpe

2. Incentive Compensation

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_____ ****** Staff historically has recommended the removal of incentive compensation awards tied to company financial performance. Staff has found no connection between the financial results for which the incentives are awarded and any tangible benefits to MAWC's ratepayers. Staff uses the criteria established in the Commission's Report and Order for ***In re Union Electric Co.,*** Case No. EC-87-114: "At a minimum, an acceptable management performance plan should contain goals that improve existing performance, and benefits of the plan should be ascertainable and reasonably related to the plan." 29 Mo. P.S.C. (N.S.) 313, 325 (1987). Furthermore, in the Report and Order in Case No. TC-89-14 et al., ***In re Southwestern Bell Telephone Company (SWB),*** the Commission stated:

> In the Commission's opinion the results of the parent corporation, unregulated subsidiaries, and non-Missouri portions of SWB, are only remotely related to the quality of service or the performance of SWB in the state of Missouri. Achieving the goals of SBC [the parent company] and unregulated subsidiaries is too remote to be a justifiable cost of service for Missouri ratepayers. Accordingly, the Staff's proposed disallowances in the senior management's long term and short-term incentive plans…should be adopted.

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Additionally, Staff has made an adjustment to remove a similar percentage of the capitalized portion of the Service Company AIP and LTIP from the plant-in-service and depreciation reserve balances from January 1, 2012, through September 30, 2015. Staff made this adjustment to remain consistent with the position that none of the incentive compensation costs relating to EPS should be borne by ratepayers. Since Staff was unable to allocate the total amount to specific plant accounts, Staff applied a composite depreciation rate based on the rates used in the current case to calculate the related accumulated depreciation amount associated with capitalized incentive compensation costs. Staff will also continue to review this issue through January 31, 2016, as part of its true-up audit.

Staff Expert/Witness: Jason Kunst

3. Severance Costs

During the test year ending December 31, 2014, MAWC paid out $190,936 in severance payments to employees, and the Service Company allocated an additional $719,392 of this expense to MAWC. MAWC proposes to include in rates the $190,936 test year level of severance payouts to former MAWC employees as well as a four-year amortization of the Service Company allocated severance costs, or $179,848, annually in Service Company severance. Staff has submitted several data requests seeking more information in order to further analyze all severance payments and to definitively determine

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whether or not the achieved cost savings resulting from the employee reductions exceed the severance payouts. If MAWC has achieved net savings due to its severance payments, there is no justification to recover these amounts from customers in rates. Therefore, Staff has removed these severance costs from its cost of service calculation until the Company provides responses to the requested information.

Staff Expert/Witness: Jason Kunst

4. Employee Benefits Other Than Pensions and OPEBs

MAWC and the Service Company offer various benefits to their employees including a 401-K, Employee Stock Purchase Plan (ESPP) and various types of insurances (medical, dental, vision, etc.). Staff annualized the benefits on an employee-by-employee basis for both MAWC and AWWSC for all benefits other than the ESPP. Staff recommends not allowing recovery of booked expense associated with the ESPP as there is no actual cash outlay for this item made by MAWC. As part of its true-up audit, Staff will continue to analyze employee levels and each category of actual benefit cost data through January 31, 2016, as information becomes available. **_____ _____ **

Staff Expert/Witness: Jason Kunst

5. FAS 87 Pension Costs

Financial Accounting Standards Board's (FASB) Accounting Standards Codification (ASC) Subtopic 715-30, formerly known as Financial Accounting Standard No. 87 ("FAS 87") is an accrual accounting method required by the accounting profession under Generally Accepted Accounting Procedures (GAAP) for financial reporting purposes. Under FAS 87 a company accrues (expenses) on employee's earned pension benefits over the service life of the employee. The total obligation to the employee for pension benefits is accumulated annually until retirement in the Accumulated Benefit Obligation (ABO). Both financial statement expense recognition under FAS 87 and the minimum funding requirements under the Employee Retirement Income Security Act of 1974 (ERISA) are based upon the same pension plan obligation to employees enrolled in the plan. While different assumptions are used for the timing of pension cost recognition during the service life of the employee under

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FAS 87 and ERISA, both FAS 87 and ERISA are intended to address the same total ABO by the employee's retirement date.

Staff, Missouri-American Water Company, and other parties entered into a Stipulation and Agreement ("the Agreement") in Case No.WR-2007-0216, and subsequent rate cases including Case Nos. WR-2008-0311 and WR-2010-0131, that addressed the ongoing ratemaking treatment for annual qualified pension cost. These prior agreements call for MAWC's pension cost rate recovery to be based upon MAWC's ongoing pension expense used in setting rates and pension expense recorded on its books. These prior agreements call for MAWC to defer the difference on their books between their annual minimum ERISA contribution amount and their annual FAS 87 expense calculation. Further, these Agreements require MAWC to track the difference between its annual minimum ERISA amount and the level included in the Company's rates. In this rate case proceeding, the difference between the annual pension cost and the amount included in rates, as accumulated in the tracker, has been included in rate base and amortized over a period of five years as an addition or reduction to pension expense.

Staff has calculated the ongoing allocated minimum ERISA amount or pension in the amount of $2,947,250 (after application of the operating and maintenance percentage). Staff's pension calculation incorporates MAWC's actuary's calculation of the minimum ERISA amount, as well as all prior tracker balance amortizations from MAWC's previous rate cases.

Staff Expert/Witness: Kofi A. Boateng, CPA, CIA

6. FAS 106 – Other Post-Employment Benefits (OPEBs) Cost

In the MAWC rate case, No. WR-2007-0216, and later rate cases, the Commission addressed the ratemaking treatment for the annual OPEBs (retiree health benefit) cost under FASB ASC 715-60 (formerly FAS 106). As with FAS 87, the Commission authorized the rate base inclusion of the difference between the amount of OPEB expense included in rates and the amount funded during the same period that those rates were in effect. The OPEB tracker amount included in rate base in the Staff's cost of service calculation in this rate proceeding is consistent with the treatment of this item since Case No. WR-2007-0216. Staff calculated the ongoing allocated FAS 106 cost in the amount of $2,039,606. Staff's OPEB

calculation includes the actuary's FAS 106 costs and all tracker balance amortizations from MAWC's previous rate case.

Staff Expert/Witness: Kofi A. Boateng, CPA, CIA

7. Defined Contribution Plan (DCP)

MAWC terminated its pension and OPEB plans for new employees beginning employment with MAWC in the early years of the last decade. The DCP expense replaces MAWC's Pension and OPEB plan expense for new employees and provides employees hired after 1/01/2006 for non-union employees and 1/01/2001 for union employees with an employer match based upon a ratio of base payroll. Staff reflected the cost relating to DCP in its pension and OPEB calculations.

Staff Expert/Witness: Kofi A. Boateng, CPA, CIA

8. Employee Relocation Expense

MAWC routinely incurs expenses associated with the relocation of its employees. Staff normalized MAWC's test year relocation expense as well as all Service Company allocated relocation expense based on a three-year average ending December 31, 2014.

Staff Expert/Witness: Sarah Sharpe

D. Maintenance Normalization Adjustments

1. Main Break Expense

A main break occurs when a water pipe (main) breaks and/or separates completely, or a leak is detected which requires a portion of the main to be repaired or replaced. The number of main breaks and the cost associated with repairing these breaks is variable, particularly in the St. Louis Metro District. In previous rate cases, Staff has calculated an ongoing level of main break expense by multiplying an average of the number of main breaks by an average of the cost of repairs on a per-break basis.

Staff has reviewed the frequency and expenses associated with main breaks during the test year ending December 31, 2014. Staff recommends a normalization of main break expense calculated in four steps as follows for the St. Louis Metro District:

1. In the Company's response to Staff Data Request No. 26, it stated that an abnormally high number of main breaks occurred in the first three months of 2014 due to the "Polar Vortex" weather phenomenon.

Staff determined that utilizing a number of main breaks which was not representative of ongoing conditions would be inappropriate. Staff calculated an average of the number of main breaks in January, February, and March of 2011, 2012, and 2013 and used the average for each month to replace the corresponding month in 2014. The months of April through December 2014 are not adjusted; only January through March of 2014 is adjusted for the Polar Vortex phenomenon. This average and substitution results in a normalized number of main breaks for 2014.

2. Staff then calculated a three-year average of main breaks for each month of the year using 2012, 2013 and 2014 data. The data used in this calculation includes the adjusted January, February, and March 2014 main break numbers described in Step 1 and the actual 2012, 2013, and April through December 2014 main break numbers. The result is a fully normalized number of main breaks.

3. Staff analyzed the cost of main break repairs on a per-repair basis and determined that there has been a trend of declining cost per break since 2011. Therefore, Staff recommends that the 2014 level of cost per break be applied to normalize ongoing main break expense.

4. Staff multiplied the normalized number of main breaks calculated in Step 2 by the 2014 cost per break as discussed in Step 3. The result is a normalized level of main break expense of $2,279,604.

As indicated above, the above calculation only normalizes main break expense in the St. Louis Metro district. However, the Company stated in its response to Staff DR No. 0110 that districts other than the St. Louis Metro district, including the St. Joseph, Warrensburg, and Ozark Mountain districts, experienced abnormally high numbers of main breaks during 2014. Staff submitted DR No. 0315 to obtain more information regarding main break expense in these districts but did not receive a response from the Company in time to review information regarding main break expense in these districts. Once the Company provides a response to Staff DR No. 0315, Staff will conduct a review and will recommend any appropriate adjustments for main break expense in these districts.

Staff Expert/Witness: Brian Wells

2. Tank Painting Expense

Staff used a five year average of tank painting and inspection costs completed on a 12 month-basis for the five twelve-month periods ending September 30, to determine a normalized level of $1,277,656 for tank painting and inspection expense to include in the cost

of service. Staff allocated the normalized tank painting and inspection expense and amortization of the tracker regulatory asset by using an allocation factor determined by the square footage of the tanks in each district.

Staff Expert/Witness: Jason Kunst

E. Other Non-Labor Expenses

1. Rate Case Expenses

A utility company incurs various expenses in its presentation of a rate case before the Commission. Rate case expense often includes costs related to securing outside legal counsel, retaining expert consultants and even miscellaneous items such as copying costs, travel expenses, and rate case publication costs.

a. Normalization

Staff reviewed MAWC's rate case expense related to this case for the reasonableness and prudence of all services secured and all costs incurred. Staff calculated a normalized level of rate case expense, which includes the rate case expense MAWC has incurred for the current rate case, Case No. WR-2015-0301, through September 30, 2015. Staff calculated this normalized level of rate case expense by analyzing the filing dates of MAWC's requests for rate increases since 2003. From the filing of MAWC rate case WR-2003-0500 through the filing of MAWC's current rate case, there has been an average of approximately 30 months between case filings. Therefore, Staff recommends that all rate case expense incurred in this rate case be normalized based on this 30-month average interval between rate cases, with the exception of the costs MAWC incurred for the completion of a depreciation study. The Staff proposes that the costs associated with the depreciation study be normalized over a 60-month period, since depreciation studies are generally required to be conducted every five years.

Because Staff is calculating a normalized level of rate case expense based on the expense incurred by the Company in this rate case, and because this rate case is ongoing, Staff will continue to review incurred rate case expense for reasonableness and prudence as the rate case progresses and as MAWC provides new information. Staff will examine expense incurred through the earlier of the date of a global resolution of this case or the true-up reply brief filing date of April 22, 2016. Staff's position is that expense incurred after the earlier of these two dates should not be eligible for inclusion in Staff's normalization in this rate case or

in a future rate case. The Company should provide documentation of rate case expense no later than one week subsequent to the earlier of these two dates. Documentation provided by the Company after a week expires will not be considered by Staff, regardless of when the corresponding expense is incurred.

b. Sharing Recommendation

In the *Staff Investigative Report on Rate Case Expense* ("Report") filed in Case No. AW-2011-0330 in September 2013, Staff made certain recommendations regarding ongoing rate recovery policies for utility rate case expense. Within the Report, Staff asserted that rate case expense provides a benefit to both utilities and customers. Staff noted that a practice of granting utilities full recovery of incurred rate case expense does not provide the utility with strong incentives to reasonably limit their expenditures in this area. Staff also expressed concerns in the Report that full rate recovery of incurred rate case expense gives a utility an inappropriate financial advantage over other parties and interveners in rate cases which must operate with budgetary and other financial restrictions. It was therefore Staff's conclusion in the Report that the application of "structural incentives" to rate case expense recovery be considered by the Commission in order to acknowledge the dual-beneficiary nature of rate case expense incurrence, alleviate a utility's advantage over other parties in a rate case, and to incentivize a utility to file a "tight" case that is easier to process.

One option mentioned by Staff in the Report to accomplish the above-stated goals was for rate case expense to be shared between ratepayers and shareholders according to the percentage of a utility's rate increase request that is ultimately determined to be just and reasonable by the Commission. This is the mechanism that Staff recommends be employed in this rate case to annualize rate case expense. This sharing mechanism assigns to ratepayers costs that are reasonable and from which ratepayers receive a benefit, and only those costs; it reduces the Company's significant financial advantage over other participants in the rate case process; and it provides an incentive for the Company to control its costs.

The Commission recently provided specific guidance on this issue in its Report and Order in ***Re: Kansas City Power & Light,*** Case No. ER-2014-0370 which referenced the aforementioned Staff Report. In its decision, on page 72 of Order, the Commission stated the following:

> The Commission finds that in order to set just and reasonable rates under the facts in this case, the Commission will require KCPL shareholders to cover a portion of KCPL's rate case expense. One method to encourage KCPL to limit its rate case expenditures would be to link KCPL's percentage of recovery of rate case expense to the percentage of its rate increase request the Commission finds just and reasonable.[47] The Commission determines that this approach would directly link KCPL's recovery of rate case expense to both the reasonableness of its issue positions and the dollar value sought from customers in this rate case.[48]
>
> The Commission concludes that KCPL should receive rate recovery of its rate case expenses in proportion to the amount of revenue requirement it is granted as a result of this Report and Order, compared to the amount of its revenue requirement rate increase originally requested.

After reviewing the evidence and circumstances of MAWC's current WR-2015-0301 rate case, Staff recommends that rate case expense be shared between MAWC ratepayers and shareholders by the same method suggested in the Staff Report issued in Case No. AW-2011-0330, and ordered by the Commission in the recent KCPL rate case, Case No. ER-2014-0370. Staff recommends the percentage of rate case expense which is to be borne by the ratepayers be equal to the percentage of its rate increase request that is determined to be just and reasonable. Ultimately, this will be the percentage of the Company's rate increase request that is granted by the Commission.

Since the depreciation study was required to be conducted in the rate case (as mentioned above), Staff recommends that the depreciation study be exempt from the application of the recommended sharing percentage and be recoverable over five years.

Staff Expert/Witness: Brian Wells

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[47] This method can be expressed as: (Revenue Requirement Approved / Original Revenue Requirement Requested) X 100 = allowable percentage of rate case expense.

[48] It is understood that some of the issues litigated in this case do not directly affect the overall revenue requirement granted by the Commission; but it is clear that the vast majority of the litigated issues do have a direct or indirect impact on the revenue requirement. Accordingly, percentage sharing is a reasonable approach to correlating recovery of rate case expense to the relationship between the amount of litigation that benefited both ratepayers and shareholders and that which benefited only shareholders.

2. PSC Assessment

The operations of the Public Service Commission are funded by assessments levied upon regulated utility companies. The funding required from each utility is evaluated yearly and a new assessment is billed on July 1. These assessments are used to reimburse the Commission for its operating costs. Staff has annualized the PSC assessment expense to reflect the most current assessment issued on July 1, 2015.

Staff Expert/Witness: Jason Kunst

3. Lobbying Expense

Staff has a long-standing policy of excluding all amounts related to lobbying expenses by utilities since these activities are generally entered into in order to promote shareholder interests. Staff has made adjustments to remove lobbying expenses that were incurred by ** _____ _____ . ** Disallowances also include lobbying amounts indirectly incurred through organizational dues at the Service Company level and that were allocated to MAWC.

Staff Expert/Witness: Sarah Sharpe

4. Purchased Water

Staff annualized purchased water for the St. Louis, Platte County (Parkville), Jefferson City and Spring Valley water operating districts. These districts purchase water from the City of St. Louis, Kansas City Water Services, Callaway County Water District #1, and Ozark Water System respectively. When demand is higher than what the systems in each of these districts are capable of pumping from their own sources, they must purchase water from a third party water provider. The annualized value for each of these districts is based on the annualized system delivery for each of the districts as well as the current costs in the contracts between MAWC and the water providers listed above.

Staff Expert/Witness: Erin M. Carle

5. Electricity

Staff annualized electricity expense for each district based on the current cost of electricity and the normalized system delivery. Staff also considered any rate increases in electricity that had taken place during the test year.

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Staff developed a rate for power cost per 1,000 gallons of water for each district. This number is based on the adjusted electricity cost and the test year system delivery. Using this value, Staff applied it to the annualized system delivery to calculate the annualized cost of fuel and electricity for each district. This value also takes into consideration the normalized water loss that occurred at each district.

Staff is waiting for information for electricity and heating oil expense associated with building maintenance and services. The Company proposed a $37,421 adjustment to increase this expense. At this time, Staff does not have the information to support this adjustment. Once all data for this issue is received, Staff will determine if an adjustment is warranted.

Staff Expert/Witness: Erin M. Carle

6. Chemical Expense

Staff based annualized chemical expense for each district on multiple factors. Staff annualized the level of chemical expense by using the current price for each type of chemical and applied this to either a five year average or the test year level of chemical usage used in the water treatment process. Staff used a five year average for some districts where chemical usage fluctuated upward and downward from year to year. Test year chemical usage was used for other districts where a discernable upward or downward trend was exhibited in the year to year level of chemicals usage. Staff then determined the cost of chemicals for every 1,000 gallons of water. Staff applied this value to the adjusted system delivery factor to calculate the annualized level of chemical expense for each district.

I provided Staff witness James A. Merciel, Jr. of the Staff's Water and Sewer Department, with the annualized water loss expressed as percentages of total production. He agreed that they are reasonable, for purposes of this direct testimony. Staff bases an adjusted system delivery factor on system delivery after annualized water loss. System delivery is the amount of water that was pumped for each system. This total includes all water sold to the customers including export to wholesale customers or other MAWC systems, as well as any water lost due to leaks, broken pipes, theft or unauthorized use, unmetered authorized use, or other unaccounted for water. Staff used a five-year average, or an average of the available data that represented a full 12 months for each year for all districts on the system less than five years, to annualize the water loss percentage. Staff applied this water loss percentage to the normalized level of system delivery for the purpose of calculating

chemical costs. Staff currently has a data request asking the Company to update their system delivery data through the end of the true-up period as of January 31, 2016. Once this data is available, Staff may propose a further adjustment to the water loss percentages for any of MAWC's systems as part of the true-up audit.

Staff Expert/Witness: Erin M. Carle

7. Water Audits and Water Losses

In recent years, MAWC acquired small water and sewer systems; and many of those systems were older existing systems. These acquisitions resulted from either a sale case completed as a joint filing with an existing Commission regulated utility seeking to transfer its assets, or a certificate of convenience and necessity case ("CCN") when the seller was an operation that was not regulated such as a homeowners' association, municipality or a developer who did not have a CCN. Many of these older existing systems are often in poor, run-down condition, and in such cases, an owner with utility system expertise is vital to continuing safe and adequate service to the customers.

Staff has concerns about water losses on some of MAWC's recently acquired systems, in particular one of them, the Saddlebrooke subdivision system, located north of Branson, Missouri. Excessive water loss wastes not only the water resource, but also the electric energy used for pump operation and chemicals used for water treatment or disinfection. The Saddlebrooke system is experiencing extensive water loss of more than 1,500 gallons per day per customer, according to sales and water production information collected by Staff auditors. Billed customer usage in Saddlebrooke, averaged annually, is about 390 gallons per day per customer, itself a rather high consumption level for residential customers. Several other systems owned and operated by MAWC could be candidates for improvement.

In studying water losses, Staff needs to quantify actual loss, and evaluate the problem by taking into consideration system characteristics such as total length of water mains in service, customer service pipe length, water pressure, the number and types of customers, customer usage, and other quantifiable usage whether or not such usage is billed or authorized, all of which have an effect on water loss levels. However, due to a lack of past operations documentation prior to MAWC's ownership, analyzing and quantifying water loss problems along with realistic expectations of improvement, is a task that Staff would rather work through with MAWC, particularly for the newly-acquired systems, in order to gather

complete operation documentation and study reasons why a particular system might be experiencing what could be considered to be abnormal losses. Working with MAWC on this issue would better serve ratepayers to arrive at the most accurate cost of service and agreed-upon solutions. In the event MAWC and Staff cannot agree on levels of water loss, then the issue could be a true-up issue in this case, and/or a future rate case issue, with proposed adjustments for real costs. For this reason, rather than attempting to propose disallowances and adjustments to costs because of water losses at this time in this case, Staff wishes to deem five-year averages of production levels as found in this case, or other available information for systems owned less than five years, to be reasonable; and then conduct further study of some systems; and then work with MAWC to agree on identifying water loss problems, and undertaking of solutions to resolve them, with cost adjustments as appropriate.

Staff Expert Witness: James A. Merciel, Jr.

8. Lease Expense

MAWC incurred expenses related to its leases on land, equipment, and facilities during the test year in the course of providing service to its customers. Staff has reviewed the test year leases expense and annualized each of these amounts to reflect an overall decrease in the ongoing level due to changes in lease payments and the expiration of leases that were not renewed by MAWC.

Staff Expert/Witness: Jason Kunst

9. Transportation Lease Expense

Transportation expense is the cost associated with MAWC's use of vehicles (trucks, vans, cars) and other power-operated equipment (backhoes, tractors, and forklifts, etc.) in its operations. Staff reviewed the effective date of the leases for these items through September 30, 2015, to determine which leases would be ongoing. Staff annualized the cost of the ongoing vehicle leases based on changes in lease terms through September 30, 2015. Additionally, MAWC incurs fuel expenses for these leased vehicles. Staff annualized the test year fuel costs for leased vehicles to reflect current fuel prices.

Staff Expert/Witness: Jason Kunst

10. Insurance Expense

Insurance expense is the cost of protection obtained from third parties by utilities against the risk of financial loss associated with unanticipated events or occurrences. Utilities, like non-regulated entities, routinely incur insurance expense in order to minimize their liability (and potentially, that of their customers) associated with unanticipated losses. Staff proposes to adjust MAWC's insurance expense to reflect all insurance premiums currently in effect at September 30, 2015. Staff will review all insurance policies through the true-up period ending January 31, 2016, to reflect any additional changes to insurance premiums that may occur.

Staff Expert/Witness: Sarah Sharpe

11. Corporate Franchise Tax Expense

On April 26, 2011, Governor Nixon signed Senate Bill 19, which requires a gradual phase out of Missouri's corporate franchise tax over five years. The corporate franchise tax was based on the amount of assets a business has located in Missouri. Senate Bill 19 gradually phased out corporate franchise tax for Missouri businesses with assets of more than $10 million located in the state. Under Senate Bill 19, the corporate franchise tax rate was reduced each year until the 2016 tax year, which begins on January 1, 2016, at which time the Missouri corporate franchise tax rate was reduced to zero and eliminated. MAWC is a business that has assets in excess of $10 million located in Missouri.

During the test year, which covered the twelve months ending December 31, 2014, MAWC was assessed, and paid, a corporate franchise tax to the State of Missouri. However, since the Governor and the General Assembly have enacted a law which requires the Missouri corporate franchise tax to expire on January 1, 2016, which is within the January 31, 2016, true-up cutoff in this case, the Staff has made an adjustment to remove the paid corporate franchise tax liability from the test year.

Staff Expert/Witness: Sarah Sharpe

12. Dues and Donations

Staff reviewed the listings of various membership dues and charitable donations paid by MAWC and the Service Company expenses allocated to MAWC during the test year ending December 31, 2014. After reviewing the incurred expenses, Staff recommends the

disallowance of certain memberships and dues because they are deemed to be of no benefit to MAWC's ratepayers and also are not necessary for the provision of safe and adequate utility service to its customers. Any recovery in rates of these disallowed expenses would be an involuntary contribution on behalf of the ratepaying customer.

In ***Re: Missouri Public Service, a Division of UtiliCorp United, Inc.,*** Case Nos. ER-97-394, et al., Report and Order, 7 Mo.P.S.C.3d 178, 212 (1998), the Commission stated:

> The Commission has traditionally disallowed donations such as these. The Commission finds nothing in the record to indicate any discernible ratepayer benefit results from the payment of these donations. The Commission agrees with the Staff in that membership in the various organizations involved in this issue is not necessary for the provision of safe and adequate service to the MPS ratepayers.

Staff has also made disallowances to remove test year amounts pertaining to any lobbying expense or governmental affairs membership dues that pertained to lobbying and governmental affairs related activities; these adjustments are addressed under the Lobbying Expense section of this Report.

Staff Expert/Witness: Sarah Sharpe

13. Miscellaneous Expense

During the test year, MAWC incurred various miscellaneous expenses for items such as sponsorships, supplies for community events, community involvement events, and flowers. All of these items are deemed to be of no benefit to MAWC's ratepayers, and are not necessary for the provision of safe and adequate utility service to its customers. Therefore, Staff has made adjustments to exclude all these costs from its cost of service calculation.

Staff Expert/Witness: Sarah Sharpe

14. Promotional Giveaway Expenses

Staff has removed from its cost of service calculation all costs incurred by MAWC during the test year for promotional giveaway items that were distributed at various events. Some of the items given away during the test year included duck-shaped backpack bags, water bottles, drinking cups, and mini notepads. All of these promotional giveaway items are deemed to be of no benefit to MAWC's ratepayers and also are not necessary for the provision of safe and adequate utility service to its customers.

Staff Expert/Witness: Sarah Sharpe

15. Advertising Expense

Staff relied on the principles outlined by the Commission in the 1986 Report and Order for a Kansas City Power & Light Company rate case in forming its recommendation of the allowable level of the Company's advertising expense in this proceeding. In ***Re: Kansas City Power and Light Company,*** Case Nos. EO-85-185, et al., 28 Mo. P.S.C. (N.S.) 228, 269-71 (1986), the Commission adopted an approach that classifies advertisements into five categories and provides separate rate treatment for each category. The five categories of advertisements recognized by the Commission in the above order are as follows:

1. General: informational advertising that is useful in the provision of adequate service;
2. Safety: advertising which conveys the ways to safely use electricity and to avoid accidents;
3. Promotional: advertising used to encourage or promote the use of electricity;
4. Institutional: advertising used to improve the company's public image;
5. Political: advertising associated with political issues.

Classifying a utility's advertisements into these categories ensures that a utility's revenue requirement: (1) always includes the reasonable and necessary cost of general and safety advertisements; (2) never includes the cost of institutional or political advertisements; and (3) includes the cost of promotional advertisements only to the extent the utility can provide cost-justification for those advertisements. (*Report and Order* in KCPL Case Nos. EO-85-185, et al., 28 Mo. P.S.C. (N.S.) 228, 269-271 (April 23, 1986)).

Staff reviewed all advertisements that the Company provided and classified them using this five-category system. Staff recommends an adjustment to exclude the costs of institutional and promotional advertising, as well as costs for which the Company has provided no associated advertisements for review.

On November 13, 2015, Staff submitted DR No. 0282 requesting copies of all advertisements related to costs in accounts titled "Customer Education." The Company did not respond to this data request within the twenty-day response period and still had not responded to the data request as of December 10, 2015. The Company's unpunctuality has

left Staff with insufficient time to review the requested advertisements. Therefore, Staff recommends an adjustment to remove all costs from accounts titled "Customer Education" until the advertisements requested in Staff DR No. 0282 can be reviewed.

On November 4, 2015, Staff submitted DR No. 0271 requesting information regarding ** _____ _____ _____ ** as was discussed in the Company's board of directors' meeting notes. The Company did not respond to this data request within the twenty-day response period and still had not responded to the data request as of December 10, 2015. Without this information, the Staff has no way of examining the nature of these costs, the amount of these costs, or even the accounts where MAWC recorded these costs. Therefore, as a placeholder, the Staff has made an adjustment to remove $100,000 from the Staff's cost of service calculation because the Company has not provided the requested information. Once the Company provides the Staff with the requested information, the Staff will review the information in order to determine the appropriate amount of adjustments associated with this campaign, if any.

Staff Expert/Witness: Brian Wells

16. Legal Expense

Staff examined all legal fees incurred during the test year ending December 31, 2014. In this section of the Report, Staff is addressing all non-rate case expense legal fees. For a complete discussion of rate case expense related legal fees, please refer to Section VIII.E.1. The Company's non-rate case related legal expense can be separated into two parts: MAWC corporate level expenses and service company level expenses. In Staff's review of the invoices related to the MAWC corporate level expense, Staff identified costs which can be attributed to lobbying activities. As discussed in further detail in Staff witness Sharpe's lobbying expense testimony, found in Section VIII.E.3. of this Report, lobbying activities should not be included for ratemaking purposes. Staff witness Sharpe recommends an adjustment to exclude legal fees related to lobbying expense.

MAWC uses accrual accounting to account for legal fees. Under this accrual basis, MAWC maintains a reserve of accumulated funds to pay for legal fees based on estimates of legal fees that MAWC anticipates will be incurred rather than for what is actually paid. Staff

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recommends using a cash basis approach to set customer rates for MAWC's legal fees in order to eliminate the impact of the accrual. The cash approach will include an ongoing level for this expense in Staff's cost of service calculation based on actual known costs, as opposed to the MAWC's accrual basis, which relies upon an estimate of what actual future payments and costs will be. Staff's adjustment is reasonable, because it allows the Company to recover its actual legal fees in the context of its cost of service calculation.

Finally, Staff notes that MAWC did not provide invoices or other documentation for Staff to review the service company-level expenses. Staff has submitted DR No. 0100.4 requesting that the Company provide these invoices, but a response was not provided by the Company in time for Staff to review the invoices and potentially make appropriate adjustments. When a Company response to Staff DR No. 0100.4 is provided, Staff will review it and determine if any adjustments to service company-level legal expense are appropriate.

Staff Expert/Witness: Brian Wells

17. Outside Services

MAWC was allocated Service Company level expenses pertaining to outside services that were determined by Staff to be for one-time, non-recurring events. Costs related to non-recurring events, by definition, will not be part of the cost of service going forward. Therefore, Staff has removed all of these costs from its cost of service calculation.

Staff Expert/Witness: Sarah Sharpe

18. Utility Locating Service Expense

MAWC has used internal personnel to perform underground utility locating services. However, in response to OPC DR No. 2054, MAWC indicated that it is considering outsourcing its utility locating services to an outside contractor in order to reduce the ongoing expense level. Staff recently spoke with MAWC personnel and discovered that the only change in ongoing utility locating expense since the beginning of test year occurred in the St. Joseph district. St. Joseph began outsourcing utility locating service during the test year. Staff submitted DR Nos. 0337 and 0337.1 to capture all ongoing costs for utility locating so that Staff can calculate the change in utility locating service in the St. Joseph district. The Company has yet to provide a response to Staff DR Nos. 0337 and 0337.1. Staff plans to

review these responses and may make adjustments to MAWC's test year expenses at a later point in the case based on any cost savings realized for this area.

Staff Expert/Witness: Lisa M. Ferguson

19. Waste Disposal

Waste removal and disposal expenses are a result of the treatment of water or wastewater. These treatments leave behind byproducts that must be removed from the treatment facilities. The waste removal and disposal costs and methods vary by treatment facility. MAWC sets up an accrual amount on its books for an anticipated level of waste disposal expense. In the test year in this case, the expected level of expense was not reached, resulting in an over-accrual. Staff has made an adjustment to include the actual expenses that occurred in the test year ending December 31, 2014. Staff's adjustment recognizes the actual costs that occurred in the test year and eliminates the over-accrual. Staff has submitted a data request seeking additional historical information regarding this issue and will continue to evaluate this issue as part of its true-up audit.

Staff Expert/Witness: Jason Kunst

20. Postage Expense

Staff annualized postage expense by using the actual number of large and small meter mailings for the test year ending December 31, 2014, and applying it to the current postage rates. Staff used the allocation factors supplied by Staff witness Kimberly K. Bolin to spread the postage expense to all districts. At this time the Staff only has the number of mailings information through December 31, 2014, but has submitted DR 267.1 to obtain the number of mailings by month through the end of the true-up period ending January 31, 2016.

Staff is also aware that the U.S. Postal Service proposed a postage rate increase for select mailing classes and services that would go into effect on January 17, 2016. However, the proposed postage increases have not yet been approved by the Postal Regulatory Commission. Staff will review this expense during the true-up audit to capture any updated information regarding the number of mailings as well as all postage rate increases that have been approved by that time.

Staff Expert/Witness: Erin M. Carle

21. Belleville Lab Expense

The Belleville Lab, operated by American Water Works Service Company, provides a full suite of water analyses and related services to MAWC and American Water subsidiaries to meet required environmental regulations. In January 2012, a new Laboratory Information Management System (LIMS) was implemented at the Belleville Lab, which in turn has resulted in efficiencies that have reduced staffing as well as lessened testing turnaround time and increased on-time delivery.

In previous rate cases, MAWC has allocated all Belleville Lab costs based on a ratio of the number of MAWC customers to the total number of customers of all operating companies taking service from Belleville Lab. The function of the Belleville Lab facility is exclusively for water sample testing to comply with required regulations and thus Staff has consistently recommended using the number of test analyses as a basis of allocation because it represents a direct measurement of the work that is actually being performed at Belleville Lab for MAWC in relation to the work being performed by the lab for American Water subsidiaries in total. In addition, the amount of testing required for each subsidiary is dependent upon the type of facilities operated and the environment of the service area rather than the number of customers served.

In the current case, MAWC has accepted Staff's methodology of allocating lab costs and workload based solely on the analytical testing required by each operating Company. Belleville Lab directly charges each entity for its respective services, testing and research. The direct charge is based on a monthly query of LIMS for work performed and summarizes the services provided to each entity for the prior month. The services are then directly charged to each entity on the Service Company billing. All labor and related costs, as well as the majority of the other expenses, use a direct charge WBS element. Occasionally, other allocable lab expenses will be charged based on a customer count allocation factor (less than 5% for 2014) when the direct charge formula is not applicable, such as for safety inspections, calibrations, housekeeping or training. The overhead costs are assigned based on the labor costs as stated in MAWC's most currently filed Cost Allocation Manual (CAM) filed on March 13, 2015. Staff discovered a slight difference in the allocation percentage based on test analyses as compared to Company's direct case due to Company's case ending at January 31,

2016, and Staff's calculation ending at September 30, 2015. Staff has reduced Company's Belleville Lab expense by ($5,788) to reflect the ongoing level of testing expense.
Staff Expert/Witness: Lisa M. Ferguson

22. Uncollectibles Expense

Uncollectible expense is the portion of retail revenues that MAWC is unable to collect from retail customers because of non-payment of customer bills. After a certain amount of time has passed, delinquent customer accounts are written off and turned over to a third party collection agency for recovery. Through this process, MAWC is subsequently successful in collecting some portion of the delinquent amounts owed.

The Staff examined actual net write-offs (write-offs less collection agency recoveries) for the January 1, 2012 through September 30, 2015 period. Based upon that examination, Staff normalized the level of uncollectible expense, for each of MAWC's districts by using a three year average, for the period covering October 1, 2012 through September 30, 2015.
Staff Expert/Witness: Erin M. Carle

23. MAWC Proposed Amortizations

MAWC booked several expense amortizations in the test year ending December 31, 2014, pertaining to such items as taxable equity AFUDC, various acquisition premiums as well as one acquisition discount, and costs related to the Parkville Sewer plant, to name a few. Staff has excluded the amortizations pertaining to the acquisition premiums that MAWC paid and the acquisition discount that MAWC received in connection with acquiring other systems. Staff also excluded one additional amortization for which Staff is awaiting additional information in response to a data request in order to definitively determine the appropriateness of including this item in the cost of service calculation. Staff will continue to review this issue for possible adjustment later in the case.

On November 30, 2012, subsequent to the December 31, 2011, true-up cutoff in MAWC's last rate case, one amortization from a previous MAWC accounting authority order issuance expired. This amortization, ordered in Case No. WA-2002-0273, dealt with costs MAWC incurred for security-related expenditures following the terrorist attacks of September 11, 2001. However, this amortization has continued to be included in rates up to the present day even though MAWC has not recognized this expense on its books since 2013.

In certain circumstances, the Staff has recommended that such over-recoveries of AAO deferral amortizations be returned to customers in rates. However, in this instance, Staff does not propose to return the over-recovery of security cost amortization since neither the starting nor ending points when MAWC recorded amortization expense for this cost were "synchronized" with rate recovery for this item; i.e., the starting point of booking the amortization preceded the effective date of rates in the prior rate case for which the amortization was included in rates. To be consistent with Staff's prior position, had the starting point for recording the amortization expense been delayed to the effective date of rates in a rate case, Staff would have proposed a return of the resulting over collection in rates to customers.

Staff Expert/Witness: Lisa M. Ferguson

24. Atrazine Settlement

MAWC was a plaintiff to a class-action lawsuit titled ***City Of Greenville, et al. vs. Syngenta Crop Protection, Inc., and Syngenta AG,*** Case No. 3:10-cv-00188-JPG-PMF, heard in the U.S. District Court for the Southern District of Illinois. Other American Water entities, such as Illinois-American, Iowa-American, Ohio-American, and Illinois-American Water Companies were also plaintiffs to this lawsuit. The lawsuit focused on the use of the herbicide Atrazine, and its effects on the watershed surrounding treated fields. The settlement Memorandum and Order stated:

> [P]laintiffs allege that Atrazine has continuously entered their water supplies allegedly injuring their property rights. Plaintiffs allege that they have had to test and monitor their water supplies for Atrazine, as well as to install, operate, and maintain systems to filter Atrazine from their water supplies. Plaintiffs also allege that in addition to these past expenses, the continued presence of Atrazine in their water supplies will cause them to incur future expense.

The U.S. Environmental Protection Agency has not placed any usage restrictions on the herbicide, and the need by water utilities to treat for Atrazine will continue for the foreseeable future. MAWC personnel confirmed that the proper treatment for the presence of Atrazine in raw water is the use of powdered activated carbon, a treatment chemical that treats "hundreds of taste and odor compounds, organic compounds, pesticides, color, etc." per MAWC's response to Staff DR No. 0197.

A settlement of this lawsuit was filed on May 24, 2012, and subsequently approved by the Court. Under the settlement, reparations to plaintiffs were paid from a $105 million dollar relief fund. Of these funds, approximately $32.1 million were paid in court-approved attorney fees and $8.5 million in court-approved costs.

As a result of settlement of the lawsuit, MAWC has received $1,160,256 from the relief fund by submitting documentation of Atrazine-positive water tests and entering test information into the court-approved payment formula required by the settlement agreement. This amount was booked by MAWC in January 2013.

Per MAWC's supplemental response to Staff DR No. 0197:

> [T]here were no expenses incurred by or allocated to MAWC with regard to the lawsuit and eventual settlement of the Atrazine case. To the extent MAWC employees provided information to its attorneys in connection with the litigation, the time taken to gather and provide such information was part of the employees' normal, daily activities and such time was not separately tracked.

As shown above, MAWC did not separately track internal costs such as labor and legal expenses. Furthermore, MAWC had a responsibility to file for rate cases in order to address any known revenue requirement deficiencies that may have existed during the span of time covering the lawsuit proceedings. This would require MAWC to assess all relevant factors, which would include all changes in costs associated with powdered activated carbon used to treat water for atrazine, as well as all internal labor and legal costs. In fact, MAWC filed an application seeking permission from the Commission to increase rates in Case Nos. WR-2011-0337 and SR-2011-0338. MAWC ultimately received a $24 million rate increase as part of a global black box settlement, effective on April 1, 2012, as part of those rate proceedings. In addition, MAWC has treated water for Atrazine contamination since the 1980s, and ratepayers have borne the burden of paying for the chemicals necessary for the treatment. For these reasons, it is appropriate to flow the benefit of the lawsuit settlement dollars back to MAWC's customers over a reasonable length of time. Staff proposes that the entire amount of this $1,160,256 settlement be treated as a regulatory liability and amortized to ratepayers over a three-year period, as a reduction to expense. This treatment would provide a $386,752 annual reduction in cost of service to customers in this proceeding.

Staff Expert/Witness: Sarah Sharpe

25. Property Tax Expense

For property tax assessment purposes, a utility is required to file a valuation of its utility property as of January 1 of each year with its taxing authority. Later in the year, the utility receives the "assessed values" of the property as well as property tax rates from the taxing authority. Finally, the utility receives a property tax bill late in the calendar year with a due date of December 31 of that year.

Due to the timing of this rate case, the test year property tax expense represents the most recent known and measureable level of property tax expense level for the Company. Therefore, Staff recommends that no adjustment be made to test year property tax expense at this time. Prior to year-end 2015, the Company will receive its 2015 property tax bills from its various taxing authorities. As part of its true-up audit, Staff will review these 2015 property tax assessments and foresees utilizing these assessed values to annualize property tax expense.

Staff Expert/Witness: Brian Wells

F. General Ledgers

During the course of its audit, the Staff discovered that MAWC was unable to produce a general ledger for its water and sewer operations that provided a beginning monthly balance, all activity recorded throughout the month, and an ending monthly balance. Staff requests that the Commission order MAWC to maintain a separate water and a separate sewer monthly general ledger with district specific coding, consistent with all NARUC USOA guidelines. These district specific ledgers must show beginning monthly balances, all activity recorded during the month, and an ending monthly balance by each separate USOA account. For MAWC water operations, Staff recommends that MAWC be required to use the NARUC 1976 Revisions of Uniform System of Accounts for Class A and B Water Utilities as originally issued in 1973 for all water operations. For MAWC sewer operations, Staff recommends that MAWC be required to use the NARUC USOA for Class A and B Sewer Utilities as issued in 1976.

Staff Expert/Witness: Lisa M. Ferguson

G. Current and Deferred Income Tax

1. Current Income Tax

Staff calculated the current income tax generally consistent with the methodology used in Case Nos. WR-2010-0131 and WR-2011-0337. The calculation starts with Staff's adjusted net operating income before taxes amount and adding to or subtracting from it various tax timing differences in order to obtain a net taxable income amount for ratemaking purposes. A tax timing difference occurs when the timing used in reflecting a cost (or revenue) for financial reporting purposes (book purposes) is different than the timing required by the IRS in determining taxable income (tax purposes).

Tax timing differences can be either "normalized" or "flowed through" for purposes of setting rates. The "normalization" tax method defers the tax deduction for ratemaking purposes until the item is recognized on the utility's income statement for financial reporting purposes. The flow-through tax method essentially provides for the same tax deduction taken as a deduction for ratemaking purposes at the same time as it is taken for tax purposes.

Staff's current income tax calculation reflects timing differences consistent with the timing required by the IRS. The tax timing differences used in calculating taxable income for computing current income tax are as follows:

- **Add Back to Operating Income Before Taxes:**
- Book Depreciation Expense
- Advances for Construction
- Contributions in Aid of Construction
- Miscellaneous Non-deductible Expenses
- 50% Meals & Entertainment

- **Subtractions from Operating Income Before Taxes:**
- Interest Expense- Weighted Cost of Debt
- Tax Straight-Line Depreciation
- Excess-Tax Depreciation

The resulting net taxable income for ratemaking is then multiplied by the appropriate federal and state tax rates to obtain the current liability for income taxes. Staff normally uses a federal tax rate of 35.0 percent and a state income tax rate of 6.25 percent for calculating current income taxes for utilities with net income over $18.3 million. This composite tax rate (state and federal combined together) is 38.39 percent**.**

Staff is proposing to provide flow-through treatment to the following tax timing differences: book depreciation, advances for construction, miscellaneous non-deductible expense, 50% meals and entertainment expenses, and tax straight-line depreciation. Staff is proposing to provide normalization treatment to the excess-tax depreciation timing difference. The difference between the calculated current income tax provision and the per book income tax provision is the current income tax provision adjustment.

Staff Expert/Witness: Kofi A. Boateng, CPA, CIA

2. Straight Line Tax Depreciation

Annualized book depreciation is a result of multiplying the plant investment at September 30, 2015, the end of the test year update period for this proceeding, by the book depreciation rates recommended by Staff witness John A. Robinett of the Operational Analysis Department. Straight line tax depreciation represents the tax deduction for depreciation currently allowed for a regulated utility for ratemaking purposes.

The IRS allows a regulated utility, like any other corporation, to use an accelerated depreciation method in calculating its current income tax liability. However, with regard to a regulated utility, Congress intended for the additional cash flow (lower current income tax), resulting from an accelerated depreciation method, to be retained by the utility. As a result, under IRS rules for a regulated utility, the additional deduction resulting from the use of an accelerated depreciation method cannot be currently reflected in rates. Ratepayers receive the tax deduction benefit associated with depreciation expense over the same period used for book accounting purposes. The tax straight line depreciation amount is the result of applying the current authorized book depreciation rates to the adjusted tax basis MAWC plant balances.

In this MAWC rate case, Staff's book depreciation and tax straight-line tax depreciation are different. Staff applied a straight line tax ratio to MAWC's book depreciation to calculate MAWC's straight-line tax depreciation.

Staff Expert/Witness: Kofi A. Boateng, CPA, CIA

3. Deferred Income Tax Expense

MAWC's deferred tax reserve is, in effect, a prepayment of income taxes by MAWC's customers before payment by MAWC. As an example, because MAWC may to deduct

depreciation expense on an accelerated basis for income tax purposes, depreciation expense used for income taxes paid by MAWC is considerably higher than depreciation expense used for ratemaking purposes. This results in a "book-tax timing difference," and creates a deferral of income taxes to the future. The net credit balance in the deferred tax reserve is a source of cost-free funds to MAWC. Therefore, to avoid having customers pay a return on funds that are provided cost-free to the Company, Staff's calculation reduces MAWC's rate base by the deferred tax reserve balance. Generally, deferred income taxes associated with all book-tax timing differences created through the ratemaking process should be reflected in rate base. Staff took this approach in this case, to calculate the deferred income tax rate base offset amount. Staff included in rate base the deferred income taxes for all of MAWC operating districts.

When a current year timing difference is deferred and recognized for ratemaking purposes consistent with the timing used in calculating pre-tax operating income in the financial statements, then that timing difference is given "normalization" treatment for ratemaking purposes. Deferred income tax expense for a regulated utility reflects the tax impact of "normalizing" tax timing differences for ratemaking purposes. IRS rules for regulated utilities require normalization treatment for the timing difference related to accelerated tax depreciation.

For most utilities, it is necessary to break out a utility's tax depreciation into two separate components: tax straight-line depreciation and excess tax depreciation. Tax straight-line depreciation is different from book straight-line depreciation due to the different tax basis of property allowed under the tax code. Excess tax depreciation differs from straight-line book depreciation due to the higher depreciation rates allowed in the early years of an asset's life under the current tax code. Most tax basis differences were eliminated for assets placed into service after 1986 due to the Tax Reform Act enacted that year.

Staff's typical deferred income tax adjustment consists of three components:

1. IRS "Schedule M" timing differences - contributions in aid of construction and advances for construction: These amounts are normalized;

2. The tax timing difference between tax straight-line depreciation expense and tax depreciation expense: This amount has been normalized as well; and

3. Excess deferred income taxes resulting from the 1986 Tax Reform Act, which created excess deferred tax amounts associated with depreciation timing differences: As such, an amortization has been created to amortize excess deferred taxes created from the change in tax rates back to customers over time.

In this case, a combination of the above three components make up the amounts recorded as deferred income tax expense by MAWC.

Staff Expert/Witness: Kofi A. Boateng, CPA, CIA

IX. Service Quality and Customer Service

A. Purpose

The purpose of this testimony is to provide the Commission with a brief history of two cases (WC-2014-0138 and WO-2014-0362) concerning MAWC's recent billing and customer service concerns. This testimony will also give an update on MAWC and Service Company's progress in implementing recommendations made by the Staff.

B. History of Prior Case Nos. WC-2014-0138 & WO-2014-0362

Case No. WC-2014-0138

In mid-2013, a number of informal and formal customer complaints from the Stonebridge Service territory, also known as Stonebridge Village ("Stonebridge") in Branson, Missouri, were filed against MAWC. These customer complaints involved billing practices and alleged unreasonable charges to the customer. As a result, OPC filed a complaint case on November 13, 2013, and it was assigned as Case No.WC-2014-0138. The case was consolidated with 25 formal complaints regarding similar service and billing issues encountered by Stonebridge customers. Staff conducted an investigation of these formal complaints as well as a number of informal customer complaints also involving similar issues in MAWC's Stonebridge area and other territories. Staff found that MAWC violated sections of 4 CSR 240 Chapters 10 and 13, as well as failing to provide Staff with timely and complete responses to Staff's discovery requests.

The Staff filed its "Staff Report" in Case No. WC-2014-0138 on March 14, 2014, and made 20 recommendations for improvement, some addressing rule violations while others focused on operating procedures. Six of the recommendations focused specifically on call center operations and training. One of the most significant recommendations called for

recording all customer calls between call center representatives and Missouri regulated customers. The Staff based its recommendation on the significant value to internal control in call center operations in the recording of customer calls. Staff also pointed to the fact that every large regulated company in Missouri recorded 100% of their calls with the exception of MAWC. MAWC filed its "Response to Staff Report" on April 25, 2014.

The billing issues experienced by the Stonebridge customers occurred at the time of the Service Company's implementation of new billing software and were exacerbated by poor call center performance. Staff was of the opinion that the six recommendations focusing on the call center required MAWC's continued effort to verify completion and implementation of Staff recommendations. Staff concerns remained regarding the effective operation of the Service Company's call centers.

Case No.WO-2014-0362

On June 20, 2014, Staff filed *Staff's Motion To Open Investigatory Docket* and it was assigned Case No. WO-2014-0362, *In the Matter of Staff's Investigation into the Adequacy of the Call Centers serving Missouri American Water Company ("MAWC," "Missouri American" or "Company")*. Staff conducted discovery, interviews with Company personnel and on-site evaluations including call monitoring at the Alton Call Center facility. Staff's report was filed June 15, 2015, and included nine recommendations for improvement. Staff's recommendations to MAWC resulting from its investigation in Case WO-2014-0362 included the following:

STAFF RECOMMENDED THAT COMPANY MANAGEMENT:

1. *Ensure that Customer Service Representatives are sufficiently trained to respond in a timely manner to all customer inquiries including those regarding customer billing statements, service territories served and other inquiries. Evaluate training materials periodically and the manner in which Call Center representatives are trained regarding issues such as billing calculations, wastewater usage calculations, service territories and make improvements when necessary.*

2. *Implement methods to ensure that the Company's Call Escalation Policy is followed and review periodically to ensure compliance for all Missouri calls.*

3. *Perform a comprehensive operational audit of the American Water Works Company, Inc. Call Centers that serve MAWC customers. The audit should commence in calendar year 2016 and include but not be limited to operational areas such as: call quality control, adherence to Company Call Center policies and procedures, accurate and timely responses to customer inquiries including those regarding billing, appropriate call escalation to supervisory personnel, verification of return calls to customers, accurate calculation of bills from multiple Missouri service territories with differing tariffs and call center performance metrics.*

4. *Design and implement a procedure to ensure all Missouri American customers requesting a return or follow-up phone call from the Company's Call Center, including those requested from supervisory personnel, have their calls returned.*

5. *Ensure that all Missouri customer calls to the Company's Call Center are documented with detail on the customer's account and include steps and Company commitments made to obtain resolution.*

6. *Develop a system to monitor the types of inbound calls received at the Company's Call Center so that the Company can identify critical customer reported trends and respond with corrective action if necessary.*

7. *Evaluate the benefits of reducing the number of regulated utilities, in the American Water Works Company, Inc., in which Call Center representatives are required to be experts. Analyze the merits of specializing Call Center representatives into fewer states.*

8. *Inform the Staff and the Office of the Public Counsel promptly when significant operational or service quality performance changes are planned or occur.*

9. *Record 100 percent of all customer calls between Call Center Representatives and Missouri-regulated customers. Archive recorded phone calls for a period of no less than 12 months and in a manner that they may be retrieved and reviewed by the Company, Staff and OPC.*

On June 24, 2015, the Commission directed MAWC to respond to Staff's recommendations and to include a plan for implementing these actions.

MAWC filed a brief response to each of the recommendations on July 20, 2015, to which the Staff responded to MAWC on July 23, 2015, with additional inquiries requiring greater detail of its specific plans and performance metrics. In the Staff's opinion, it was important that MAWC and Service Company document and inform Staff regarding the specific actions that are planned to address each of the recommendations, as well as keeping Staff informed of its progress toward implementation of the recommendation.

The Commission then issued an order on July 20, 2015 directing Staff to reply to MAWC's response and indicate whether the Staff was satisfied with the response and if the case could be closed.

On August 5, 2015, Staff replied and requested the Commission to order that MAWC take the following actions:

1. *Order the Company to submit "Implementation Status Reports" to the Staff until all Company commitments identified in its July 20th, 2015 response have been completed, specifically commitments regarding Recommendation 3, Recommendation 6, Recommendation 7, and Recommendation 9. Such "Implementation Status Reports" should include the Company's implementation plan for each recommendation, a description of the Company's actions taken to date and dates actions were accomplished. Such Implementation Status Reports should be provided on a quarterly basis and be discontinued at such time that the Staff concludes the Company has sufficiently met the intent of the recommendations.*

2. *Order the Company to provide the studies, analysis and audits (Recommendations 3 and 7) that the Company's response indicates it is currently performing or will perform in response to Staff's recommendations.*

3. *Order the Company to continue meeting with the Staff as determined necessary by Staff to address call center and other service quality performance matters as they arise and to discuss the Company's progress regarding the recommendations made in this case and other topics.*

Staff also suggested that if the previous requirements were ordered, that the docket could be closed.

On August 29, 2015, the Commission issued an order accepting Staff's report, directing MAWC to comply with the Staff recommendations for status reports, additional studies and analysis, and meetings. The case file was closed on August 30, 2015.

C. Quarterly Status Report

On November 30, 2015, the first quarterly status report was submitted via email to Staff with a formal status report on the implementation of the recommendations. Staff met with MAWC management at Company offices in St. Louis on December 1, 2015, to further discuss the status of projects in more detail.

At this time, Staff is encouraged by MAWC's actions taken towards addressing the recommendations. Staff is particularly encouraged to note the Service Company's implementation of the recording of all customer calls at the call center which the Service Company indicates occurred on September 1, 2015. Staff believes this is the most critical of

the presented recommendations to assist in sustained call center improvement. The recording of customer phone calls and the Service Company representative's interaction with the customer will improve the Service Company's ability to monitor, control and improve the performance of its call center.

Staff will continue to work with MAWC and Service Company to monitor completion of the recommendations and encourage continued improvement in its customer service operations. Staff will review MAWC's progress status reports.

Staff has attached three schedules to this document to provide additional information. Appendix 3, Schedule DAB - d1 is a time line for the major events in Case No. WC-2014-0138. Appendix 3, Schedule DAB - d2 is a time line for the major events in Case No. WO-2014-0362. Appendix 3, Schedule DAB - d3 is a table illustrating the number of informal complaints received by Staff on MAWC for years 2012, 2013, 2014, and 2015 (YTD 11/30/15).

Staff Expert/Witness: Deborah Ann Bernsen

X. Consolidated Tariffs

MAWC has submitted tariff filings that would eliminate some of its existing tariffs applying to certain water service districts, by including the service districts into one of its existing water tariffs. The particular existing water tariff, posted on the Commission's Electronic Filing and Information System (EFIS) as MAWC's tariff No. 13, is a consolidated tariff that already includes several service districts, created several years ago. Additionally, MAWC has submitted a complete new sewer tariff that is proposed to serve as a tariff that will include most of its existing sewer service districts; such inclusion will allow elimination of several existing sewer tariffs.

Staff supports tariff consolidation when it is possible and practical. However, such activity results in new verbiage and rules that must be carefully worded to ensure that a consolidated tariff may reasonably apply to multiple service areas, some of which have different operations requirements. For example, several of MAWC's sewer service areas utilize pressurized sewer systems requiring mechanical/electric devices known as "pump units" to be used at customers' premises. There are two fundamental types of pump units that are commonly used, in addition to a number of products available for use; and

additionally, in some areas, customers own and maintain pump units, whereas in other areas MAWC owns and maintains pump units because multiple customers could be connected to one pump unit. It is vitally important that tariff rules clearly state what is expected of customers and what customers should expect from MAWC, as applicable to their service area. Additionally, some rules and some rates only apply to specific service areas, and tariff consolidation sometimes results in confusion as to what rules or rates apply to which service areas. For these reasons, any consolidated tariff must be clear with respect to rule and rate applicability to the various service areas.

When MAWC consolidated its water tariff, the process took many months and iterations, because multiple parties representing various service areas discussed and debated the proposed consolidation. The consolidation of the sewer tariff should not be as contentious, due to the fewer number of service areas and intervenors who represent sewer customers. However, the consolidation will take all interested parties, working together, a significant amount of time to review the entire tariff, and it is Staff's position that the consolidation of the sewer tariff only be recommended for approval after a thorough review and refinement of the proposed tariff submitted by MAWC. The review contemplated by Staff may not be able to be fully completed by the end of the rate case and Staff recommends that this issue be finished after the current rate case, if necessary.

Tariff filings submitted in this case:

YS-2016-0031, YS-2016-0032, YS-2016-0034, YS-2016-0035, YS-2016-0036, YS-2016-0037, YS-2016-0038, YS-2016-0039, YS-2016-0040

WR-2015-0301, YS-2016-0031, YS-2016-0032, YS-2016-0034, YS-2016-0035, YS-2016-0036, YS-2016-0037, YS-2016-0038, YS-2016-0039, YS-2016-0040

Staff Expert/Witness: James A. Merciel, Jr.

XI. Rate Design

In MAWC's last rate case, a rate design was approved that kept the seven large service areas (St. Louis Metro, Mexico, Jefferson City, Warrensburg, St. Joseph, Platte County, and Joplin) independent and combined the remaining small areas in "District 8."

Within District 8, the various service areas had different rates. Staff will go into more detail with this concept in its Class Cost of Service/Rate Design Report.

In this case, Staff will be proposing the same approach to rate design as it did in the previous rate case. MAWC has continued its very aggressive approach in acquiring numerous systems throughout the State. Most of these systems are small, residential subdivision development type systems with a very small customer base. Therefore, Staff will be proposing a hybrid approach between full single-tariff pricing (STP) and full district-specific pricing (DSP).

Staff's proposal will be to combine MAWC's various water systems into three districts.

- District One will consist of the following systems: St. Louis Metro, Incline Village (Warren County), Mexico, Jefferson City, Lake Carmel (near Jefferson City), Redfield (Cole County) and Anna Meadows.
- District Two will consist of the following systems: St. Joseph, Platte County, and Brunswick.
- District Three will consist of the following systems: Joplin, Stonebridge/Maplewood/Riverside, Warrensburg, White Branch/Rankin Acres, Lake Taneycomo, Lakewood Manor/Spring Valley, Ozark Mountain, Tri-States, Emerald Pointe, and Saddlebrooke.

Staff's proposal will be to combine MAWC's various sewer systems into five districts.

- District One will consist of the City of Arnold
- District Two will consist of Platte County.
- District Three will consist of Cedar Hill, Incline Village (Warren County), Anna Meadows, and Meramec.
- District Four will consist of the Jefferson City (Cole-Callaway Counties) Area including Lake Carmel, Maplewood, and Ozark Meadows.
- District Five will consist of Stonebridge, Saddlebrooke, and Emerald Pointe.

Staff's reasoning and support for its rate design proposal will be submitted on January 20, 2016 in its Direct Testimony filed in conjunction with the Class Cost of Service/Rate Design portion of the case.

Staff Expert/Witness: James A. Busch

XII. Appendices

Appendix 1: Staff Credentials

Appendix 2: Support for Staff Cost of Capital Recommendation – David Murray

Appendix 3: Case Timelines and Informal Complaints - Deborah Ann Bernsen

Customer Usage per Day - James A. Busch

Recommended Depreciation Rates- John A. Robinett

American Water Works organizational charts - John P. Cassidy

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 DEBORAH ANN BERNSEN

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW Deborah Ann Bernsen and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing STAFF REPORT - REVENUE REQUIREMENT - COST OF SERVICE; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

DEBORAH ANN BERNSEN

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 22nd day of December, 2015.

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

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 KOFI A. BOATENG, CPA, CIA

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW Kofi A. Boateng, CPA, CIA and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing STAFF REPORT - REVENUE REQUIREMENT - COST OF SERVICE; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

KOFI A. BOATENG, CPA, CIA

JURAT

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AFFIDAVIT OF KIMBERLY K. BOLIN

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW Kimberly K. Bolin and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing STAFF REPORT - REVENUE REQUIREMENT - COST OF SERVICE; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Kimberly K. Bolin
KIMBERLY K. BOLIN

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D Suzie Mankin
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AFFIDAVIT OF JAMES A. BUSCH

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW James A. Busch and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing STAFF REPORT - REVENUE REQUIREMENT - COST OF SERVICE; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

JAMES A. BUSCH

JURAT

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AFFIDAVIT OF ERIN M. CARLE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW Erin M. Carle and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing STAFF REPORT - REVENUE REQUIREMENT - COST OF SERVICE; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Erin M. Carle
ERIN M. CARLE

JURAT

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D Suzie Mankin
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AFFIDAVIT OF JOHN P. CASSIDY

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COMES NOW John P. Cassidy and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing STAFF REPORT - REVENUE REQUIREMENT - COST OF SERVICE; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

John P. Cassidy

JOHN P. CASSIDY

JURAT

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D Suzie Mankin

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AFFIDAVIT OF LISA M. FERGUSON

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COMES NOW Lisa M. Ferguson and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing STAFF REPORT - REVENUE REQUIREMENT - COST OF SERVICE; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Lisa M. Ferguson

LISA M. FERGUSON

JURAT

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D. Suzie Mankin

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AFFIDAVIT OF JASON KUNST

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW Jason Kunst and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing STAFF REPORT - REVENUE REQUIREMENT - COST OF SERVICE; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

JASON KUNST

JURAT

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AFFIDAVIT OF JAMES A. MERCIEL, JR.

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW James A. Merciel, Jr. and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing STAFF REPORT - REVENUE REQUIREMENT - COST OF SERVICE; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

JAMES A. MERCIEL, JR.

JURAT

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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 STAFF REPORT - REVENUE REQUIREMENT - COST OF SERVICE; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

DAVID MURRAY

JURAT

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AFFIDAVIT OF JOHN A. ROBINETT

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW John A. Robinett and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing STAFF REPORT - REVENUE REQUIREMENT - COST OF SERVICE; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

John A. Robinett
JOHN A. ROBINETT

JURAT

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D. Suzie Mankin
Notary Public

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AFFIDAVIT OF SARAH SHARPE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW Sarah Sharpe and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing STAFF REPORT - REVENUE REQUIREMENT - COST OF SERVICE; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

SARAH SHARPE

JURAT

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AFFIDAVIT OF BRIAN WELLS

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COMES NOW Brian Wells and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing STAFF REPORT - REVENUE REQUIREMENT - COST OF SERVICE; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

BRIAN WELLS

JURAT

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