MAWC 40

Exhibit No.:	
Issues:	Description of MAWC and its operating facilities, Consolidated Water Tariff, Main Break Maintenance Costs, Benefits of Business Transformation Project, Annual Incentive Program, Organizational Streamlining
Witness:	Philip C. Wood
Exhibit Type:	Direct
Sponsoring Party:	Missouri-American Water Company
Case No.:	WR-2015-0301 SR-2015-0302
Date:	July 31, 2015

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. WR-2015-0301
CASE NO. SR-2015-0302

DIRECT TESTIMONY

OF

PHILIP C. WOOD

ON BEHALF OF

MISSOURI-AMERICAN WATER COMPANY

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

IN THE MATTER OF MISSOURI-AMERICAN WATER COMPANY FOR AUTHORITY TO FILE TARIFFS REFLECTING INCREASED RATES FOR WATER AND SEWER SERVICE	)))))	**CASE NO. WR-2015-0301** **CASE NO. SR-2015-0302**

AFFIDAVIT OF PHILIP C. WOOD

Philip C. Wood, being first duly sworn, deposes and says that he is the witness who sponsors the accompanying testimony entitled "Direct Testimony of Philip C. Wood"; that said testimony and schedules were prepared by him and/or under his direction and supervision; that if inquiries were made as to the facts in said testimony and schedules, he would respond as therein set forth; and that the aforesaid testimony and schedules are true and correct to the best of his knowledge.

Philip C. Wood

State of Missouri
County of St. Louis
SUBSCRIBED and sworn to
Before me this 24 **day of** July **2015.**

Notary Public

MOLLIE L. OGDEN
Notary Public, Notary Seal
State of Missouri
St. Louis County
Commission # 12166844
My Commission Expires August 02, 2016

My commission expires:

DIRECT TESTIMONY
PHILIP C. WOOD
MISSOURI-AMERICAN WATER COMPANY
CASE NO.WR-2015-0301
CASE NO.SR-2015-0302

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DIRECT TESTIMONY

PHILIP C. WOOD

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Philip C. Wood and my business address is 727 Craig Road, St. Louis, Missouri 63141.

Q. WHAT POSITION DO YOU HOLD WITH MISSOURI-AMERICAN WATER COMPANY?

A. I am the Vice President of Operations for Missouri-American Water Company ("MAWC", "Missouri-American", or the "Company").

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to describe Missouri-American's operations, to describe the Company's efforts and investments to improve water efficiency, to summarize the Company's performance measurements, and to describe the Company's proposals to consolidate tariff rules and change certain activity based fees.

Q. WHAT DO YOUR JOB RESPONSIBILITIES INCLUDE?

A. I am responsible for the day-to-day development, management and operations of the Company's water and wastewater districts, which include the treating and furnishing of potable water; collection, treating and discharging of waste water; the provision of customer service; the safety and continuity of the Company's operations; and the upkeep and maintenance of the Company's facilities. I am responsible for the personnel employed within the Operations function as well as the development and maintenance of productive personnel relations within Operations and between Operations and the other functions with which it interacts. I am responsible for maintaining contact with local government officials regarding operational issues, business representatives, and civic organizations. I also supervise the annual budgets covering capital investments and operation and maintenance expenditures and the construction of facilities occurring under the management of Operations employees. Additionally, I have the responsibility of controlling such expenditures upon their authorization by the Board of Directors. Finally, it is my responsibility to supervise water quality, production, distribution, and customer service activities, and procedures and to ensure their effectiveness.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. I received a Bachelor of Science degree in Mechanical Engineering in 1993 from Purdue University.

Q. PLEASE OUTLINE YOUR BUSINESS EXPERIENCE.

A. In 1993, I began my career with General Electric on the Manufacturing Management Program (MMP) which is a two year training program with exposure to all aspects of operations in the Aircraft Engine and Power Systems businesses. Following the training program, I continued my operations track in the Aircraft Engine business for eight years, Healthcare business (medical imaging equipment) for 6 years, and Transportation business (Locomotives/Gensets) for 3 years. My roles included Quality, Plant Management, Program Management, Six Sigma, and Global Operations. I also earned certification as a Six Sigma Master Blackbelt. I left GE for a promotional opportunity at Continental Carbonic Products as General Manager leading all manufacturing for eight dry ice and liquid CO2 plants. In December of 2014, I began as Vice President of Operations for MAWC.

Q. ARE YOU A MEMBER OF ANY PROFESSIONAL ORGANIZATIONS?

A. Yes, I am a member of the American Water Works Association.

Q. HAVE YOU TESTIFIED BEFORE ANY REGULATORY COMMISSIONS?

A. No.

Q. WHAT ARE THE SUBJECTS FOR WHICH YOU WILL BE PROVIDING TESTIMONY?

A. I will discuss the following subjects:

1. Description of MAWC and its operating facilities
2. Consolidated Water Tariff MAWC No. 13 and Consolidated Wastewater Tariff No. 21
3. Customer class definitions
4. Main break maintenance costs
6. Benefits of Business Transformation project
7. American Water compensation program.
8. Organizational Streamlining

II. DESCRIPTION OF MAWC'S OPERATIONS

Q. PLEASE DESCRIBE MAWC'S OPERATIONS AND THE AREAS IT SERVES.

A. MAWC provides water and/or wastewater utility service to over 461,620 customers in and around over 156 communities throughout the State of Missouri. The Company's operations are widely dispersed throughout the state. We provide water service to districts ranging in size from St. Louis Metro (largest) to Lakewood Manor (26 customers). We also provide sewer utility service in our Platte County District, Warren County District, Cedar Hill District, Arnold District (5/22/15), the numerous former AquaSource/CU and Aqua Missouri

systems, Stonebridge and Saddlebrook district, Meramec district, and Emerald Pointe district.

Q. PLEASE DESCRIBE MAWC'S PLANT AND PROPERTY, AS OF DECEMBER 31, 2014.

A. The Company's utility plant accounts included land and land rights, structures and improvements, collecting and impounding reservoirs, wells, pumping equipment and associated facilities, purification plant and equipment, sludge disposal facilities, transmission and distribution mains, collection pipes, distribution storage facilities, service lines (excepting those in St. Louis County), meters, hydrants and other facilities, including materials and supplies.

Q. PLEASE DESCRIBE MAWC'S SOURCES OF WATER SUPPLY, TREATMENT FACILITIES, PUMPING EQUIPMENT AND DISTRIBUTION SYSTEM PROPERTY.

A. MAWC draws water for our water districts from surface supplies, wells and/or infiltration galleries. About 87% of the total source of supply comes from surface supply and 12% comes from wells and infiltration galleries. The remaining 1% is purchased water. The Company operates 25 distinct public water systems and from the Company's 11 water treatment plants and 29 well sites, provides service to approximately 460,000 water customers, producing approximately 73 billion gallons from January 1, 2014 through December 31, 2014. The plants provide various types of treatment appropriate for each supply. The treatment processes

include sedimentation and filtration, clarification, disinfection, taste and odor removal, organic chemical absorption, iron and manganese removal or sequestering, pH adjustment, corrosion control, and fluoridation for dental prophylaxis, all in order to meet or exceed the standards of the drinking water regulations of the Drinking Water Branch of the Missouri Department of Natural Resources (MoDNR), the United States Environmental Protection Agency (EPA), municipal and county fluoridation ordinances, and a municipal water softening franchise requirement. The Company has in excess of 6,700 miles of transmission and distribution mains ranging in size from 1-inch to 42-inch diameter, 119 water storage tanks, and 432 pump stations. The Company has over 42,000 fire hydrants available for public fire service. 119 potable water storage tanks with total capacity of approximately 143 million gallons are strategically located in the service areas for drawdown during peak demand periods and for fire protection services.

Q. PLEASE DESCRIBE MAWC'S WASTEWATER OPERATIONS.

A. MAWC operates wastewater systems in Platte County District, Warren County District, Cedar Hill District, Arnold District[1] (5/22/15), the numerous former AquaSource/CU and Aqua Missouri operations systems. Stonebridge and Saddlebrook district, Meramec district, and Emerald Pointe district. As of 12/31/2014, the wastewater system facilities consist of approximately 24 miles of collection mains ranging in size from 2-inch to 10-inch diameter. There are over

[1] On 5/22/15, MAWC added a wastewater collection system acquired from the City of Arnold.

1,649 manholes, 40 lift stations, and 76 miles of wastewater collecting system piping in these systems. These plants have a capacity of over 300,000 gallons of waste water daily. There exists a total of 46 mechanical wastewater treatment plants and 10 lagoons that serve 4,900 wastewater customers. Arnold consists of around 1.5 mgd average volume and 3,500 manholes, serving 8,600 customers.

Q. WHAT IS THE CONDITION OF MAWC'S UTILITY PROPERTY?

A. MAWC maintains its water and wastewater utility properties in a good state of operating condition for the rendering of water and wastewater utility service. The reports of inspections conducted by the Missouri Department of Natural Resources (DNR) confirm the Company's operations are in compliance with state and federal drinking water and waste water laws and regulations. Kevin Dunn's Direct Testimony contains information regarding the Company's capital investment activities that, in addition to utility property maintenance and operation, are critical to the provision of safe and adequate water and wastewater utility service.

Q. ARE ALL OF THE FACILITIES THAT ARE INCLUDED IN THE UTILITY PLANT ACCOUNTS OF MAWC IN SERVICE AND REASONABLY NECESSARY FOR THE PROVISION OF SAFE AND ADEQUATE WATER AND WASTE WATER SERVICE?

A. Yes. All of MAWC's property is necessary for and is being used to fulfill the Company's responsibility to provide safe and adequate water and wastewater utility service.

III. MAWC STAFFING LEVELS AND COMPENSATION

Q. HAS MISSOURI-AMERICAN EFFECTIVELY MANAGED ITS STAFFING LEVELS?

A. Yes. MAWC has worked diligently to review staffing opportunities resulting from attrition and to continually evaluate the needs and priorities of the business. In this current rate application, we have 690 positions identified as the appropriate staffing level.

Q. DOES THE COMPANY INVEST IN ITS EMPLOYEES, AND DOES THAT INVESTMENT LEAD TO EFFICIENCIES AND OTHER CUSTOMER BENEFITS?

A. Yes. The Company continues to provide development and continuous learning opportunities for employees. One example is training provided on the principles of lean management. 154 employees have participated in Six Sigma Yellow Belt training to learn strategies and skills to accelerate improved business results through continuous focus on customers, process and data driven decisions. Our employees continue to be trained on the latest technologies which drive efficiencies and aid in retention of highly skilled employees.

Q. PLEASE DESCRIBE THE COMPANY'S EFFORTS IN REGARDS TO SAFETY.

A. Safety is a core value for Missouri American and is a high priority for our Company. We have a robust safety program which employs a combination of on-the job training, classroom instruction, site observations and audits. Employees are provided the personal protective equipment and tools needed to perform work safely and are held to high standards to ensure the safety of themselves as well as the general public. MAWC has Operational Risk Management professionals on site solely dedicated to providing support, training and counseling. As incidents occur, investigations are completed to identify causes and corrective actions to minimize the likelihood of repeat occurrences. Recently, we have enhanced our near miss reporting program which provides opportunities to prevent injury. By reporting and investigating situations that could have resulted in injury but didn't, we work to identify causes and implement corrective actions to prevent injuries.

Q. HOW DOES THE COMPANY ATTRACT AND RETAIN HIGH QUALITY EMPLOYEES?

A. One of the critical tools in attracting and retaining talented employees is the ability to provide a competitive compensation and benefits package. American Water uses a combination of compensation and benefits to attract and retain employees and to improve performance and efficiency. American Water provides base salary and overtime pay for hourly employees and fixed and variable (or at risk) compensation for management employees. The objective of American Water

is to pay compensation that is, on average, comparable to the mid-point of compensation paid by enterprises with whom we compete for employee talent.

Q. IS THERE AN OBJECTIVE MEASUREMENT OF THE REASONABLENESS OF THAT OVERALL EXPENSE?

A. Yes, I believe there is. The reasonableness of that overall expense is supported by the review and analysis of American Water's compensation program conducted by Towers Watson. Direct Testimony of Robert Mustich and Attachment 1. When determining the reasonableness of compensation, the focus should be the reasonableness of the company's overall compensation when the compensation levels for many of its employees are near the mid-point of the compensation range for similar positions in the area and there is no evidence that the employees are overpaid, even when variable payments are included. If overall compensation levels are reasonable, regardless of the combination of fixed and variable payments that the employees earn, then the company's overall salary expense is reasonable. MAWC targets the mid-point of the compensation range so that overall compensation levels are reasonable.

Q. WHY DOES MISSOURI-AMERICAN WATER PAY A COMBINATION OF FIXED AND VARIABLE PAYMENTS TO ITS MANAGEMENT EMPLOYEES?

A. Missouri-American Water's compensation program is designed to recognize the opportunity and accountability employees share as a team and individually for

achieving Company goals and providing measurable customer satisfaction levels. Funding under the variable compensation program directly ties the amount of available for payouts to performance against specific metrics. Variable at risk compensation is an important part of Missouri-American Water's total compensation package for full-time management, professional and technical employees who are exempt from overtime.

Q. WHY IS THE VARIABLE COMPENSATION NECESSARY TO ATTRACT AND RETAIN TALENTED EMPLOYEES?

A. Competition among companies to attract and retain the best and highest performing employees is keen. In recruiting new employees or retaining existing employees, MAWC and American Water competes with general industry in Missouri, the surrounding regions, and nationally. For MAWC, the region includes companies in the manufacturing and service industries in addition to other utilities and energy companies.

Missouri-American Water's compensation plan is designed to provide employees with a total compensation package on par with those offered by companies with whom it competes for employees. The plan emphasizes customer service, environmental compliance, a safe work environment, and other operational goals, as well as certain financial goals focusing on efficient operation. Employees who excel at their performance can earn higher compensation than the norm, while employees who do not excel at their performance may earn less than the norm.

American Water and MAWC would be at a competitive disadvantage in the marketplace if incentive compensation was subtracted from its overall compensation package. In that situation, American Water and MAWC would lose the ability to attract and retain the talented people it needs. Prospective employees expect to see a compensation package that is comparable to what is otherwise available in the marketplace. Per the direct testimony of R. Mustich, if variable compensation was not part of the American Water's and MAWC's compensation program, our compensation simply would not be as competitive. 1.

Q. DOES THE COMPANY'S COMPENSATION PROGRAM BENEFIT CUSTOMERS?

A. Yes. The plan is designed to provide compensation more effectively for performance and to focus participants in the plan on the performance results that can most directly influence customer satisfaction, health and safety, and environmental performance. Customers derive benefit from the focus provided by the Company's compensation program, as customer service remains a key measure in the plan with the goal of delivering operational service excellence.

A well-constructed incentive compensation plan includes components of financial, operational and individual measures. Well-grounded financial measures keep the organization focused on improved performance at all levels of the organization, particularly in increasing efficiency, decreasing waste, and boosting overall productivity. All of these aspects of overall performance benefit customers

by rewarding superior performance in every function. The non-financial component directly benefits customers in the form of efficient employees and improved service to customers. Other incentive measures focus the employees on core operating drivers such as water quality, environmental compliance, and workplace safety, which promote an efficient organization.

In Missouri, employers compete for the best-qualified employee candidates at all levels. The competition for qualified employees is especially felt in technical and professional areas where pools of potential employees are small and competition is keener. In addition, with an aging workforce, we will need to attract employees to the utility business, which may or may not have appeal to a younger workforce as they plan their future careers. A competitive compensation program will help the Company fill those slots that directly interact with the customer and the public at large, in addition to serving the organization's infrastructure.

Finally, a financially healthy utility focused on efficiency and customer service is able to attract the capital investments necessary to provide safe and reliable service and to maintain the technological expertise necessary to operate the Company and comply with increasing water quality standards. A financially healthy utility is very much in the interest of our customers as it helps ensure the ability to provide safe and reliable service at the lowest reasonable cost. Our incentive compensation plan is not an addition to reasonable compensation. Our incentive compensation plan makes our compensation reasonable.

IV. WATER EFFICIENCY

Q. ARE YOU FAMILIAR WITH THE TERM "WATER EFFICIENCY?"

A. Yes, it is a term we are quite familiar with at MAWC.

Q. PLEASE EXPLAIN THE CONCEPT OF WATER EFFICIENCY?

A. In simple terms, water efficiency means using improved practices and technologies to deliver water service more efficiently. From an operations perspective, improving water efficiency requires achieving a cost-effective mix of prudent investments and improved operations and maintenance management capabilities targeting safety, customer satisfaction, sustainability, and system efficiency.

Q. CAN PRUDENT CAPITAL SPENDING ENHANCE OPERATIONAL SUSTAINABILITY AS WELL AS REDUCE OPERATING EXPENSES IN THE SHORT RUN AND LONG RUN?

A. Yes, it can. I will give the following recent examples which demonstrate how well investment can improve water efficiency. MAWC installed a new pump station at our Central Plant in St. Louis County. This pump station not only reduced a significant amount of operations expense (energy savings and Ameren incentive payment of $176K), but also has proven to be a more environmentally friendly way of conducting business. Another example is found at our North Plant in St. Louis County, where chemical feed and basin improvements were

implemented that allow us to replace the aged and high maintenance equipment and reduce manpower. The Ameren rebate for replacing both stages was $16,910. Also, non-capital repairs took place on pumps to bring them back to near new operating performance. The plant was also converted to liquid ferric flocculent resulting in approximately $50K annual savings. At our Brunswick plant, solar panels were introduced, resulting in a $49,410 rebate from KC P&L and $3,309 in electric savings the first year.

Q. PLEASE PROVIDE OTHER EXAMPLES OF IMPROVED OPERATIONAL EFFICIENCIES SINCE THE COMPANY'S LAST RATE CASE.

A. MAWC has a team dedicated to implementing operational efficiencies that have totaled $18M (2010 Expense, CPI adjusted vs. 2015 plan). Below are some of the key projects implemented:

- Greater use of outsourcing peak demands in workload, e.g. pipeline replacements and low skill work, utility locates and large meter testing. Outsourcing utility locates and large meter testing enables us to have our skilled employees doing higher value work while leaving this outsourced work to contractors with greater economies of scale and lower unit costs.
- Reduce the number of job titles in the labor force through job consolidation, e.g.,
  - truck drivers, distribution maintenance and construction workers consolidated into one job classification.

- construction working foreman and distribution maintenance working foreman positions consolidated into one

These consolidations provide for greater flexibility in work assignments, higher capacity utilization and productivity.

- Change frequency of fire hydrant inspections and use permanent staff as opposed to temporary employees eliminating hiring costs and requirement to keep 17 additional vehicles for temporary employees on hand.
- Close the front office customer service pay window in the St. Louis County operation.
- Reduce Fluoride dosage levels in all districts.
- Consolidate of duties for the treatment plant operator assistant and laborer positions in the production facilities in the St. Louis County operation. This consolidation also provides for greater flexibility in work assignments, higher capacity utilization and productivity. In the St. Louis County operation each maintenance crew has been outfitted with a rock breaker in place of renting a handful of shared units. This has reduced crew wait time.
- Consolidate and reduce waste hauling frequencies at all sites.
- Implement several electricity savings lighting projects at production facilities at a number of MAWC operations. Approximately $70K was invested resulting in over 353,000 annual kwh savings and $13,292 electricity savings. Also, over 692,000 lbs of CO2 was reduced annually.

Q. IS THIS THE EXTENT OF THE IMPROVED PRACTICE AND INVESTMENTS TO IMPROVE WATER EFFICIENCY THAT MISSOURI-AMERICAN WATER HAS MADE SINCE ITS LAST RATE CASE?

A. No, of course not. Using investment to provide water service more efficiently is fundamental to our business strategy. The foundational technology investment in Business Transformation enabled us to leverage the size and scale of American Water to improve transactional efficiencies, increase automation, and adopt more effective business processes so that we can work smarter and more efficiently.

V. BUSINESS TRANSFORMATION PROGRAM

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE SCOPE OF THE BUSINESS TRANSFORMATION PROGRAM OR "BT PROGRAM."

A. In 2008-09, a team at American Water began a comprehensive review and analysis of the state of its information technology systems and then made recommendations for their improvement. As a result of this comprehensive review and analysis, American Water identified the investments necessary to replace and upgrade applicable system components. The scope of the BT program covered a wide range of core functional areas, including: finance and accounting, human resources, purchasing and inventory management, capital planning, and customer and field services.

Q. WAS IT NECESSARY FOR AMERICAN WATER TO UNDERTAKE ITS BT PROGRAM?

A. Yes, it was. Our technology had become antiquated, and our information technology systems needed to be replaced. When American Water's now-replaced information technology systems were acquired in the mid-1990s and early 2000s, they met the customer expectations and business requirements of the time. Given the technological advances over the last decade, it is not surprising that those legacy systems came to lack the functionality necessary to satisfy today's business requirements and customer expectations. American Water undertook the Business Transformation program to update and modernize its business processes and information technology systems. Although the BT investment was needed to replace legacy systems near the end of their useful lives, the program provided an opportunity to promote operating excellence, efficiency, and economies of scale as it enhances the customer experience.

Q. WHAT ARE THE PROJECTS THAT COMPRISE THE BT PROGRAM?

A. There are three major projects that comprise the core of the BT program: Enterprise Resource Planning ("ERP"), Enterprise Asset Management ("EAM"), and Customer Information System ("CIS"). ERP includes human resources, finance and accounting, supply chain, and procurement management. EAM includes the management of asset lifecycles including the design, construction, commissioning, operations, maintenance and decommissioning/replacement of plant, equipment and facilities as well as work management for both customer

service field work (service turn-ons, leak inspections, etc.) and Transmission & Distribution system work. CIS includes all billing information about our customers, including billing rates, water consumption, associated charges, meter information, and the strategy for managing and nurturing our interactions with our customers.

Q. DID MISSOURI-AMERICAN PARTICIPATE IN THE DESIGN AND IMPLEMENTATION OF THE NEW SYSTEMS?

A. Yes. Employees of Missouri-American had extensive involvement in the BT program and actively participated in various roles throughout the process. In fact, MAWC employees had to be involved in the BT program in order to ensure that MAWC's business and IT needs were properly served at all stages of the program.

Q. WHEN WERE THE NEW BUSINESS TRANSFORMATION SYSTEMS DEPLOYED TO MISSOURI-AMERICAN WATER?

A. The ERP system was deployed in August 2012, and CIS and EAM were deployed for Missouri-American in May 2013. These systems are in use by our employees and are providing service to our customers.

Q. HAS THE BT PROGRAM PROVIDED BENEFITS TO MISSOURI-AMERICAN?

A. Yes, it has. BT provides MAWC with an integrated information technology platform across all functions and departments, allowing all business processes to share information in real time. Aligning business processes with the increased capabilities of the new, integrated technology systems enables MAWC to capture, use and maintain critical business information, making it easier to access and share information across systems—breaking down information barriers—while also giving each department or function within the Company the compatible "module" it needs to do its job. In this way, BT enables Missouri-American to bridge information gaps, reduce redundancies and opportunities for error, and provides MAWC a powerful tool for effectively managing the business. The integrated ERP, CIS and EAM systems provide a platform for connecting people, processes, assets, industry-based knowledge, and enable us to change how we manage our business.

Q. PLEASE PROVIDE SOME EXAMPLES OF HOW BUSINESS TRANSFORMATION PROVIDES A PLATFORM FOR CONNECTING PEOPLE, PROCESSES, ASSETS, INDUSTRY-BASED KNOWLEDGE TO CHANGE HOW YOU MANAGE YOUR BUSINESS.

A. As part of the Business Transformation program, Missouri-American implemented both a Geographic Information System ("GIS") and Computerized Maintenance Management System ("CMMS"). A GIS integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information. GIS allows us to view, understand,

question, interpret, and visualize data in many ways that reveal relationships, patterns, and trends in the form of maps, globes, reports, and charts. A GIS helps to answer questions and solve problems by looking at data in a way that is quickly understood and easily shared. GIS technology can be integrated into any enterprise information system framework. A CMMS maintains a database of information about an organization's maintenance operations. This information is intended to help maintenance workers do their jobs more effectively (for example, determining which machines require maintenance and which storerooms contain the spare parts they need) and to help management make informed decisions (for example, calculating the cost of machine breakdown repair versus preventive maintenance for each machine, possibly leading to better allocation of resources). CMMS data may also be used to verify regulatory compliance.

Q. WHAT ARE SOME OF THE BENEFITS OF GIS AND CMMS?

A. Over time, these integrated systems will improve customer service and allow:

- Field personnel to access up-to-date mapping through computers in their vehicles and locate Company facilities and equipment (e.g., plants, tanks, boosters, hydrants, valves, and ultimately meters) using a Global Positioning System;
- Access to archived information concerning a facility. This includes "as built" construction drawings and sketches, flow test data, field maintenance work order information, last date tested, notes concerning

operation, etc., field personnel updates of mapping information allowing quicker more accurate map updates and corrections;

- Management to schedule and track maintenance and capital work performed in the system;
- Better planning for infrastructure upgrades. Leak repair data collected through the CMMS system will track failure occurrences and the cost associated with each occurrence. This allows better prioritization for replacement of facilities as discussed in this case by Kevin Dunn, Director of Engineering.

VI. FATHOM (DATA COLLECTION)

Q. HAS MISSOURI-AMERICAN MADE ANY OTHER INFORMATION TECHNOLOGY INVESTMENTS TO IMPROVE SERVICE?

A. Yes, we have. In addition to BT, MAWC has begun to upgrade its metering system to AMR, and implemented a data collection system called Fathom.

Q. HOW DOES FATHOM BENEFIT MISSOURI-AMERICAN'S METER REPLACEMENT PROGRAM?

A. Previously, the various meter vendors systems did not communicate with one another. Mixing of meter types and vendors within a service area added complexity and cost without interoperability, since economies of scale are lost. Fathom is a standardized communications platform, creating interoperability among meter manufacturers without the need for radical modifications to their

products. This allows for a seamless transition of replacement meters as well as inclusion of all legacy meters into the network with minimal impact.

Q. IN ADDITION TO CREATING INTEROPERABILITY AMONG METERS FROM DIFFERENT MANUFACTURERS, WHAT OTHER DISTRIBUTION SYSTEM DEVICES DOES THE FATHOM PLATFORM SUPPORT?

A. The Fathom platform can collect data from smart water meters as well as other devices in the system – for example, pressure gauges, acoustic leak detection monitors and water quality sensors. Because the Fathom platform is interoperable with all device manufacturers, we are not limited to use only one company's technology. Interoperability enables direct competition among vendors, which drives meter vendor prices to align with best-in-class pricing models. Competition also drives innovations in accuracy and precision at very low and high flows, which in turn reduces non-revenue water losses.

Q. PLEASE EXPLAIN HOW FATHOM CAN ENABLE MISSOURI-AMERICAN TO BETTER MANAGE ITS WATER DISTRIBUTION SYSTEM

A. The Fathom platform incorporates a Universal Data Translator (UDT), which is able to receive many kinds of data from the water distribution system, including pressure, water quality, leak detection and flow, not just usage. This fact makes the Fathom solution a powerful tool not only for meter reading and billing

purposes, but for the collection of real-time system data from which predictive analytics can be performed to better manage and operate the water distribution system. In addition to collecting meter data, a UDT also creates the foundation so all other end points in the system can be read and analyzed through the same system to make a truly intelligent network for the water system of tomorrow. Over time as this system is developed, this network will help Missouri-American manage its assets through the analysis of real time data. For example, a continuous flow alarm at a homeowners meter can be flagged and the customer notified that they have a leak. Leaks in the distribution system can be identified and located earlier. Water system pressure can be managed during fire flow events. The platform also uses an automatic business-to-business communication protocol that eliminates manual processing of data and can save field service representatives' time.

Q. YOU HAVE DESCRIBED HOW MISSOURI-AMERICAN'S INVESTMENTS IN INFORMATION TECHNOLOGY HAVE ENABLED IMPROVED OPERATIONS AND POTENTIAL MAINTENANCE MANAGEMENT CAPABILITIES. CAN YOU ALSO EXPLAIN HOW THESE INVESTMENTS HAVE ENABLED MORE EFFICIENT USE OF CAPITAL?

A. Yes, I can. An underlying feature that provides Missouri-American with improved information to guide its decisions is the data in our new information technology systems – inventory, services, suppliers, assets, employee, and customer

information. Our disciplined approach to cost controls and investments in information technology have resulted in the more efficient use of our capital by enabling MAWC to more effectively leverage American Water's buying power to negotiate contracts for goods and services to the benefit of our customers.

Through the size and breadth of American Water, Missouri-American has continued to increase its purchasing power and obtain significant discounts on the necessary equipment needed to manage and maintain our system – including pipes, fittings, meters, and other equipment – that we otherwise would be unable to obtain were we a smaller, separately owned water system. Because the Fathom platform is interoperable, Missouri-American was able to effect a seamless transition of meter manufacturers with minimal operational impact.

VII. ORGANIZATIONAL STREAMLINING

Q. PLEASE DESCRIBE MISSOURI-AMERICAN'S EFFORTS TO IMPROVE ITS ORGANIZATIONAL STRUCTURE.

A. As part of our dedication to water efficiency, the Company continually strives to find more efficient and cost effective ways to operate and maintain its business. As part of that effort, we strive to manage our cost structure as efficiently as possible. Missouri-American uses various operational and efficiency reviews to further focus on improving customer service and efficiency of production and field operations, and the results of that focus are paying off for our customers.

VIII. TARIFF PROPOSALS

Tariff Rules Consolidation

Q. WHAT IS THE PURPOSE OF FILING THIS TARIFF RULES CONSOLIDATION?

A. The purpose of the tariff rules consolidation is to establish, to the greatest extent possible, one set of rules that would be applicable to all of MAWC's water operations and one set of rules for all of MAWC's wastewater operations.

Q. DID THE COMPANY ALREADY CONSOLIDATE ITS WATER RULES AND REGULATIONS TARIFF?

A. Yes. The Company proposed in Case No. WR-2010-0131, that the tariffed Rules, Regulations and Conditions of Water Service be consolidated into one consistent tariff document. Consolidation did not take place at that time; but, as a result of the Stipulation and Agreement in that case, a number of task forces or groups were established to work collaboratively to develop a consolidated set of tariffs. Parties worked diligently over a long period of time and in October of 2011, a consolidated set of Rules, Regulations and Conditions of Water Service was submitted to the Commission and approved.

Q. IS THE COMPANY PROPOSING TO FURTHER CONSOLIDATE ITS WATER RULES AND REGULATIONS TARIFF?

A. Yes. Missouri American Water Company No. 13 "consolidated" water tariff is written and intended to be applicable for substantially any of MAWC's water services areas. Since the consolidation of our water tariff, several water acquisitions have occurred. Anna Meadows, Emerald Pointe, and Redfield were all consolidated at the time of acquisition. However, four other service areas still need to be consolidated. These include: 1) Tri-States Utility P.S.C. Tariif No. 1, which closed on August 30, 2013 and currently adopted as Missouri-American Water Company P.S.C. Mo. No. 19; 2) AquaSource/RU P.S.C. Tariff No. 2, which closed on May 16, 2011, and currently adopted as Missouri-American Water Company P.S.C. Mo. No. 11; 3) Aqua Missouri P.S.C. Tariff No. 1, which closed on May 16, 2011, and currently adopted as Missouri-American Water Company P.S.C. Mo. No. 9; and 4) Stonebridge and Saddlebrooke which closed on July 27, 2011 and August 7, 2012, respectively, and currently adopted as Missouri-American Water Company P.S.C. Mo. No. 17.

Q. IS THE COMPANY PROPOSING SIMILAR CONSOLIDATION OF RULES, REGULATIONS AND CONDITIONS OF SERVICE FOR ITS WASTEWATER OPERATIONS?

A. Yes. On the wastewater side, MAWC currently has separate tariff rules for its Platte County District, its Warren County District, its Cedar Hill District, its former AquaSource/CU and Aqua Missouri systems, its Stonebridge and

Saddlebrooke Districts, its Meramec District, its Emerald Pointe District and the Arnold District. As a result, there are inconsistencies in the way various wastewater districts operate, which leads to inefficiency and confusion. The Company is proposing that the tariffed Rules, Regulations and Conditions of Service for all its wastewater operations be consolidated into one consistent tariff document.

Q. WHY IS TARIFF CONSOLIDATION APPROPRIATE?

A. The consolidation of the rules will improve efficiencies and allow all of our water and wastewater operations to work under one set of guidelines. This will also improve our effectiveness in handling customer issues, improve customer service, and provide consistency for customers between districts and with regulators.

Customer Class Definitions

Q. ARE CUSTOMER CLASS DEFINITIONS FOR RESIDENTIAL AND SMALL COMMERCIAL CUSTOMERS AS CONTAINED IN ITS TARIFF THE SAME ACROSS ALL MAWC DISTRICTS, EXCLUDING ST. LOUIS METRO?

A. MAWC currently has two definitions for residential and commercial customers, one as contained in tariff Book 13, and another reflected in tariff Books 9 & 11.

Book 13 - Missouri Service Area

- Residential - Individually metered residences. Residences are defined as consisting of one or more rooms, with space for eating, living, sleeping and permanent provision for cooking and sanitation.
- Commercial - Non-residential, non-industrial business enterprises. Includes hospitals, churches, shopping centers, offices, restaurants. Service may be provided through one or more meters.

Book 9 & 11 - Former Aqua Properties

- Residential - the persons occupying a building or portion of a building in the case of a multi-family dwelling under one roof which is owned, leased or rented by one party and occupied as a residence.
- Commercial - A retail or service business utilizing any building, portion of a building or combination of building in the same compound, which does not manufacture any item on the premises. A hotel, motel, tourist court, or recreation vehicle park which rents or leases rooms or spaces to tenants.

All of the Districts classify customers as defined in the definitions above. The Company's proposal to consolidate the water rules and regulations will eliminate this identified difference in definitions. The only exception is the classification of apartments and multi-family dwellings. If there are separate meters for each unit, it is considered residential, if there is only one meter they are classified as commercial and billed to the property owner.

IX. MAIN BREAK MAINTENANCE COSTS

Q. PLEASE DESCRIBE MAWC'S PROPOSED ADJUSTMENT TO OPERATING EXPENSES RELATED TO MAIN BREAK EXPENSE FOR THE ST. LOUIS COUNTY DISTRICT.

A. The purpose of this adjustment is to annualize main break expense to a normalized, pro forma level based on a review of historical main breaks and the cost to repair the breaks in the St Louis District. The Company is proposing an increase of test year main break expense for the St. Louis District in the amount of $121,783. The Company is proposing a decrease main break incidents in the test year from 1,118 to 952; however, the unit cost for repairing main breaks has increased. Actual test year repair cost per main break that required street repair was $2,826. The Company is proposing an increase in paving cost per break that requires street repair to $3,445 due to an increase in paving, material, and supply costs. This adjustment can be found on Schedule CAS-9, Page 17..

X. PERFORMANCE MEASUREMENTS

Q. HOW DOES MAWC MEASURE ITS EFFORTS TO IMPROVE WATER EFFICIENCY?

A. Missouri-American continually strives to deliver steady or improved levels of water service to its customers while mitigating cost increases. The Company monitors a variety of metrics to measure its progress at improving water efficiency including customer satisfaction, water quality complaints, customer complaints, Operations & Maintenance (O&M) costs, O&M efficiency ratio, non-revenue water (NRW). Please see the attached Schedule PCW-1 for a summary

of MAWC performance measurements from 2010 through the 2nd Quarter of 2015.

Q. WHAT ARE THE BENEFITS OF PERFORMANCE MEASUREMENTS AND OPERATING METRICS?

A. Performance measurements and operating metrics[2] are a valuable tool to monitor and manage performance over time within a company. Tracking performance measurements can provide MAWC's management with critical feedback over time on whether the Company's practices and investments are positively or negatively affecting the desired outcomes. By objectively measuring data, MAWC can develop a framework for making rational business decisions to improve performance and eliminate waste.

Q. WHAT DO MISSOURI-AMERICAN'S PERFORMANCE MEASUREMENTS REVEAL?

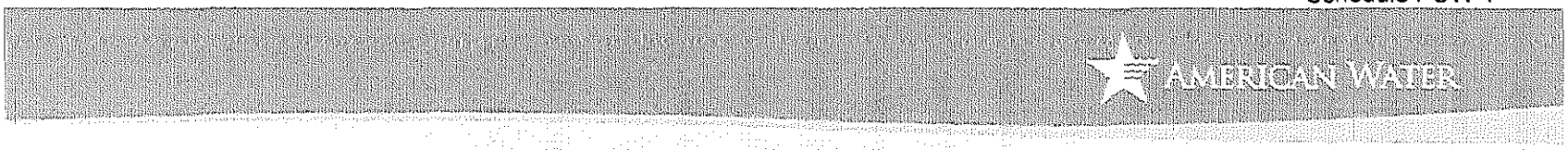
A. From 2010 through 2015, MAWC performance measurements indicate that our customers are using water wisely and are increasingly satisfied with the water service that we provide them, and that Missouri-American is operating more efficiently while providing high levels of service quality. Customer satisfaction climbed from 92.0% to 95.8% from 2010 to 2012, but decreased to 88.9% in 2014 as expected due to Business Transformation system implementation. However, through June, 2015, satisfaction has climbed back up to 91%. Customer

[2] For the purposes of this testimony, performance measurements and operating metrics are considered one and the same.

complaints per 1000 customers has improved from 0.38 in 2010 to 0.15 through June 2015. Water quality complaints have improved from 3.1 in 2010 per 1000 customers to 1.3 through June 2015 (Schedule PCW-1). We have accomplished these improvements in service quality with significantly fewer people. This very significant productivity gain has been accomplished through several means such as, process improvements, attrition, reorganization, and technology utilization and deployment. As a result, Missouri-American's annual O&M expenses have declined by greater than $900K over the past four years - from $126.453M in 2010 to $125.514 in 2014. In contrast, simply increasing our O&M expenses at the rate of inflation from 2010 to the end of updated requested true up period in this case (January 31, 2016) would have resulted in $139.520M of O&M expenses or a $13.067M reduction. (Schedule PCW-1) When removing the expenses as a result of acquisitions to compare 2010 and 2015 equally (along with inflation remaining), O&M expenses are down $7.125M. (Schedule PCW-1, page 2) This demonstrates a solid and sustained improvement in water efficiency and is a testament to the discipline and cost controls that we are implementing at Missouri-American and how the efforts of our management and employees provide.

Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.



Missouri Performance Measures

Performance Measures	2010	2011	2012	2013	2014	2015 June YTD or plan
Customer connections	452,102	454,094	455,730	464,232	464,498	473,828
System Delivery (volume in '000s)	74,270	74,438	79,396	72,868	73,283	72,121
Water Sales ($ '000s)	60,276	60,564	64,856	58,119	56,899	56,388
System Replacement Percentage	0.15%	0.25%	0.72%	1.01%	1.08%	0.52%
Customer complaints per 1,000 customers	0.38	0.39	0.25	0.26	0.24	0.15
Customer Satisfaction Survey Rating	92.0%	92.6%	95.8%	91.3%	88.9%	91.0%
Customer calls to Customer Service Center					194,409 YTD 6/2014	159,424 YTD 6/2015
Water Quality Complaints per 1,000 customers	3.1	1.3	No data available	1.9	3.4	1.3
Number of NOV's	1	0	1	0	0	0
MGD/employee	103	100	112	107	112	111
Employees per 1,000 customers	1.60	1.63	1.56	1.46	1.41	1.38
Customer connections per employee	626	613	642	685	710	727
Total O&M expense	$126,453	$122,064	$131,111	$126,444	$125,514	$122,893
Total Operating Revenue	$224,608	$243,140	$279,468	$264,778	$270,160	$275,658
Revenue per employee	$311	$328	$394	$391	$413	$423
O&M efficiency ratio (excludes PW)	51.5%	48.2%	44.9%	45.8%	44.3%	42.2%

O&M Expense Savings

O&M Expense level 2010 Actual	$126.453M
O&M Expense level 2015 Rate Case	$122.893M
Net expense reduction	$3.560M
Increase in 2015 expense included by attributable to acquisitions	$3.564M
Total O&M Expense Decrease from 2011 Filing to 2015 Filing	$7.125M