Exhibit No.:	
Issues:	Operations and Facilities, Commitment to Water Quality and Safety, Operating and Maintenance Expense, Improving Water Efficiency, AMI, Maintenance, Operational Technology, Employee Levels and Compensation
Witness:	Grant A. Evitts
Exhibit Type:	Direct
Sponsoring Party:	Missouri-American Water Company
Case No.:	WR-2020-0344 SR-2020-0345
Date:	June 30, 2020

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. WR-2020-0344
CASE NO. SR-2020-0345

DIRECT TESTIMONY

OF

GRANT A. EVITTS

ON BEHALF OF

MISSOURI-AMERICAN WATER COMPANY

AFFIDAVIT

I, Grant A. Evitts, under penalty of perjury, and pursuant to Section 509.030, RSMo, state that I am the Vice President of Operations for Missouri-American Water Company, that the accompanying testimony has been prepared by me or under my direction and supervision; that if inquiries were made as to the facts in said testimony, I would respond as therein set forth; and that the aforesaid testimony is true and correct to the best of my knowledge and belief.

Grant A. Evitts

Grant A. Evitts

June 30, 2020
Dated

DIRECT TESTIMONY
GRANT A. EVITTS
MISSOURI-AMERICAN WATER COMPANY
CASE NO. WR-2020-0344
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TABLE OF CONTENTS

DIRECT TESTIMONY

GRANT A. EVITTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Grant A. Evitts, and my business address is 727 Craig Road, St. Louis, MO, 63141.

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

A. I am employed by Missouri-American Water Company ("MAWC", "Missouri-American" or "Company") as Vice President of Operations.

Q. Please summarize your educational and professional qualifications.

A. I'm currently enrolled in the Bachelors of Applied Management program at Ranken Technical College in St. Louis Missouri. I've also achieved two-year certificates in Instrumentation and Process Control and Industrial Electricity / Electronics, both from Ranken Technical College. I currently possess a Class "C" Water Operator's License in the state of Illinois.

Q. Please describe your business experience.

A. I began my career with American Water Works Company ("American Water") in East St. Louis Illinois in the position of Relief Operator / Buildings & Grounds Maintenance at Illinois-American Water Company in 1989. In 1994, I was promoted to Maintenance Service Specialist and in 1996 I was promoted to Production Maintenance Supervisor. In 2003, I accepted the position of Operations Superintendent in Lincoln Illinois. In 2004, I was awarded the position of Manager of Field Operations – Southern Division

and in 2012 promoted to Senior Manager of Field Operations & Production – Southern Division, both of which were in Belleville Illinois. In 2016 I accepted the position of Senior Director of Operations in St. Louis Missouri and in 2019, promoted to my current position.

Q. Please summarize your responsibilities for MAWC.

A. I am responsible for the Company's water and sewer operations across the State of Missouri, including field services, production, maintenance, water quality, environmental compliance and safety. My oversight includes ensuring that our operations team continues to provide high quality water and sewer service and meets MAWC's operational targets.

Q. What is the purpose of your Direct Testimony in this proceeding?

A. The purpose of my Direct Testimony is five-fold. First, I describe the Company's water and sewer operations and facilities throughout Missouri. Next, I discuss the Company's commitment to water quality and safety that benefit MAWC's customers. Third, I discuss MAWC's level of operating and maintenance ("O&M") expense in this case and how it supports the Company's efforts to continue providing high quality water and sewer service in the most cost-effective way to our customers in the long-term. Fourth, I discuss MAWC's programs and commitment to improving water efficiency. Finally, I support the Company's employee levels and explain MAWC's employee total compensation philosophy.

II. OPERATIONS AND FACILITIES

Q. Please generally describe MAWC's water and sewer operations and the areas it

serves.

A. As of December 31, 2019, MAWC provided water and/or sewer utility service to a population of approximately 1.5 million Missourians through over 484,000 customer connections in the State of Missouri. The Company's operations are widely dispersed throughout the state. We provide water service to 200 distinct communities in 29 counties, with systems ranging in size from St. Louis Metro, with over 350,000 customer connections, to Lakewood Manor with 26 customer connections.

MAWC operates over 70 sewer systems in the Platte County, Warren County, Cedar Hill, Arnold, Stonebridge and Saddlebrooke, Meramec, Cole County, Hickory Hills, Jaxson Estates, Wardsville, Lawson and Emerald Pointe districts.

Q. Please describe MAWC's plant and property.

A. MAWC's utility plant accounts include land and land rights, structures and improvements, wells, pumping equipment and associated facilities, purification plant and equipment, sludge disposal facilities, transmission and distribution mains, collection pipes, distribution storage facilities, service lines, meters, hydrants and other facilities, including materials and supplies. All of this plant and property is used and useful in providing safe, proper, efficient, and reliable water and sewer services to MAWC's customers.

Q. Please describe MAWC's sources of water supply, treatment facilities, pumping equipment and distribution system property used to provide water service.

A. MAWC draws water for our water districts from surface supplies, wells and/or infiltration galleries. About 85% of the total source of supply comes from surface

supply and 14% comes from wells and infiltration galleries. The remaining 1% is purchased water.

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, the United States Environmental Protection Agency ("EPA"), municipal and county fluoridation ordinances, and a municipal water softening franchise requirement.

The water systems consist of more than 6,800 miles of main ranging in size from 1 inch to 42 inch, over 46,000 hydrants, and approximately 119 distribution storage tanks, 11 water treatment plants, 78 wells, and 100 pump stations. The Company's treatment facilities and wells produce approximately 72 billion gallons annually. The total capacity of water storage is approximately 143 million gallons which is strategically located in the service areas for drawdown during peak demand periods and for fire protection services.

Q. Please describe MAWC's treatment facilities, equipment, and collection system property used to provide sewer service.

A. The sewer system facilities consist of approximately 250 miles of collection mains ranging in size from 2-inch to 36-inch diameter, over 6,000 manholes, and 78 lift stations. There are over 50 mechanical wastewater treatment plants with capacity to treat over 350,000 gallons of wastewater daily and nearly 20 lagoons that serve our

sewer customers.

III. COMMITMENT TO WATER QUALITY AND SAFETY

a. Water Quality

Q. Please discuss Missouri-American's commitment to water quality.

A. MAWC has provided water service to customers for over 130 years. We are acutely aware that water is the only utility product intended for customers to ingest, and that our customers rely on MAWC to provide them with safe and reliable water service. Water quality is of paramount importance to the health and well-being of our customers. Beyond health and safety, we know that MAWC's customers are also interested in the aesthetic qualities of the water we treat and deliver to them. The Company demonstrates its commitment to water quality by maintaining various partnerships with drinking water organizations and proactively looking for ways to optimize treatment capabilities. This commitment has resulted in MAWC receiving zero Notices of Violations ("NOV") for drinking water over the last 7 years.

Q. Please discuss MAWC's partnerships with respect to water quality.

A. The Company's participation in The Partnership for Safe Water (the "Partnership") program is one demonstration of MAWC's commitment to the health and safety of our customers through the delivery of clean, safe, aesthetically pleasing drinking water. The Partnership is an alliance of six drinking water organizations[1] with a mission to

[1] Partnership organizations include EPA, the American Water Works Association ("AWWA"), Association of State Drinking Water Administrators ("ASDWA"), Association of Metropolitan Water Agencies ("AMWA"), National Association of Water Companies ("NAWC") and the Water Research Foundation ("WRF").

improve the quality of water delivered to customers by optimizing water system operations. Each year, the Partnership recognizes water treatment plants for their optimization and water quality.

MAWC is part of the Missouri River Public Water Suppliers Association (MRPWSA) - a group of water utility representatives along the Missouri River that engage in issues that impact treatment, Missouri River policy / management, regulatory /permitting, and monitoring of the river. The group also shares knowledge and best practices regarding drinking water treatment along the Missouri river.

MAWC has also partnered with University of Missouri – Rolla and The Water Research Foundation to evaluate the watershed for possible causes of taste and odor issues and to determine best possible treatment methods.

Moreover, MAWC, along with St. Louis Metropolitan Sewer District and Northeast Public Sewer District, is conducting a three-year, Missouri Department of Natural Resources ("MDNR") approved study on the Meramec River. Harmful Algal Blooms ("HABs") have been noted across the country and have significantly impacted drinking water sources. The Meramec River is a drinking water source for many Missourians and during certain times, it meets the conditions that promote algal growth – UV penetration, stagnant water, and plentiful nutrients. The three-year study is gathering data on the occurrence of algae and related water quality characteristics to determine the vulnerability of the river.

Q. Has MAWC been recognized for its optimization and water quality achievements?

A. Yes. Missouri-American is a participant in the Partnership's water treatment plant optimization program and has repeatedly been recognized for its optimization and water quality achievements. MAWC's six surface water treatment plants have received Phase III Directors Awards and this year, and five[2] of them have been recognized for maintaining the Phase III Directors Award status for fifteen years.

Q. Please describe any other ways the Company is demonstrating its commitment to water quality.

A. The Company evaluates water quality and associated risks from the source all the way to the customer. MAWC's integrated approach to monitoring its source water quality and using innovative technologies to evaluate risk supports the Company's ability to make more informed decisions regarding treatment and when responding to potential source water contamination events. The integrated approach includes our continued use of source water quality monitoring panels, utilization of technologies and applications (WaterSuite and Sample One View), installation of dedicated sampling stations and, gaining insights at more points throughout the distribution systems, such as chlorine residuals and potential cross connection points.

Q. What efforts has MAWC taken to monitor source water to ensure it is safe for customers?

A. The Company has continued its use of WaterSuite, a map-based tool that collects information about potential sources of contamination, and source water quality monitoring panels. In May of 2019, an oil sheen, accompanied by a strong crude oil

[2] The five plants include the Central Plant, North Plant, South Plant, Meramec Plant, and Joplin Plant.

odor, was observed on the Missouri River upstream of our Central Plant. While the sheen never made it to our intakes in sufficient quantities to be detected, we were able to utilize WaterSuite to confirm the location of several potential sources. It ended up being related to an oil company's crude oil pipeline located near the Boone Bridge on I-64. Having the ability to use WaterSuite, and the detection capabilities of the source water quality monitoring panels, provided an extra layer of protection. Additionally, the panels help establish baseline water characteristics which enable operations and water quality staff to make informed decisions about treatment levels when river conditions change.

Q. What is the Company doing to ensure safe quality drinking water in its distribution system?

A. MAWC has implemented a chlorine residual monitoring program and expanded the Cross-Connection Control ("CCC") program. Field staff are collecting chlorine residual values when maintaining or flushing hydrants in the distribution systems. These values will be used to generate a chlorine residual profile across the distribution systems helping water quality and operations staff identify potential issues. In 2018, a CCC supervisor position was added to improve the implementation of MDNR CCC regulations. Since adding this position over 300 field inspections have been completed, testing compliance required by customers has increased by over 30%, and multiple potential backflow hazards have been identified and corrected.

Q. Are there any other efforts MAWC is making to safeguard water quality?

A. Yes. In 2020, MAWC implemented an Environmental Near Miss program to help

identify and correct potential water quality and environmental issues that could lead to non-compliance events. The focus is on identifying and correcting "leading indicators" to reduce the risk of a non-compliance event. To date, over 20 near misses have been identified and corrected. As an example, we have had several chemical deliveries of off-spec treatment chemicals identified and sent back to the vendor by following our chemical delivery protocols. In addition, the Company has implemented the use of Sample One View ("S1V"). This system provides real time access to our compliance sampling requirements for our drinking water systems. S1V can be accessed anytime to determine how many compliance samples are required for the month, how many have been collected, and how many have results. Individual water system level detail can be accessed to view the specific sample types and the results. Currently, all chemical samples are monitored via S1V.

b. Safety

Q. Please describe MAWC's overall commitment to safety.

A. Ensuring the health and safety of our employees is a high priority for our Company and is critical to our success. The safety of our colleagues' and customers' is the most important thing we focus on every day, and my commitment is to ensure that every MAWC employee chooses safety in every job, every day. Employee health and safety are the responsibility of every MAWC employee, and to that end, every employee prioritizes safety.

Q. Is safety an important part of MAWC's operational performance?

A. Yes. Safety is both a Value and a Strategy for MAWC. We ask our employees to place

safety first in everything they do. We have a strong commitment to our employees (and their families) to keep them safe. A safe workplace increases employee morale, increases our commitment to one another, and in the long run, makes for a more engaged and productive workforce.

Q. What safety initiatives has MAWC implemented to improve its safety performance?

A. MAWC has implemented the following initiatives: Near Miss Reporting Program, Peer-to-Peer Job Site Inspections, Safety Culture Council, Certified Safe Worker Program and Safety Training Initiatives.

Q. Please describe the Near Miss Reporting Program.

A. In 2015, the Company launched a Near Miss Reporting Program. This program involves employees reporting a situation that could have resulted in an injury or accident. For example, if a piece of equipment becomes worn outside of a regular maintenance cycle, an employee reports this as a near miss so MAWC can replace the worn part and avoid a potential injury from an equipment malfunction.

Q. Please describe the Peer-to-Peer Job Site Inspection program.

A. In early 2017, MAWC initiated a "Peer-to-Peer" worksite inspection program where hourly union employees in St. Louis conduct worksite inspections of their peers. Generally, twice a week, groups of two employees visit work areas and evaluate the worksite using a checklist of safety items. The team is also provided with a vehicle equipped with personal protective equipment ("PPE") and other equipment to provide employees if they find a deficiency. These worksite inspections are conducted in

addition to the safety inspections performed by supervisors and health and safety managers.

Q. Please describe the Safety Culture Council.

A. MAWC has active safety committees at all levels, including safety committees at each work location and a statewide Safety Culture Council. The Safety Culture Council includes representatives from all operating areas, including union and management, and meets to discuss statewide topics regarding safety practices and culture. In addition, MAWC has union and management representatives on a National Safety Council made up of representatives from American Water's utility subsidiaries, which investigates and shares information about good practices and helps to prioritize safety initiatives for the future.

Q. Please describe the Certified Safe Worker Program.

A. In 2018 and 2019, over 90% of our employees completed our "Certified Safe Worker" program where employees certify they have completed or demonstrated 6 safety actions in areas such as health screenings, CPR/First Aid training, other safety training, pre-job stretching, stopping an unsafe job, submitting safety improvement suggestions and/or practicing safety at home. To assist workers in achieving some of the criteria, MAWC trained nearly all of its employees on CPR/First Aid, and each year provides training to maintain certification. In addition, Automated External Defibrillators ("AEDs") are located in every one of our office and production facilities.

Q. Please describe the Safety Training Initiatives.

A. Delivering comprehensive safety training is at the core of MAWC's plan to improve

safety performance. All employees are required to complete safety training annually. In many instances this training exceeds 20 classroom hours. In 2018 and 2019, 665 MAWC employees attended over 550 safety related training classes spanning more than 23,000 hours in support of moving MAWC toward the goal of zero work-related injuries. To support this initiative a training supervisor position was added in 2018. Comprehensive training profiles have been developed for each employee, ensuring employees receive required safety training. With regard to worker safety/security training, to date we have trained employees on Active shooter (304 in STL), 399 on Field Active Shooter (263 in STL), 297 on Verbal Defense and Influence (246 in STL), 65 on Gang Awareness (64 in STL), 113 on the Lone Worker application (113 in STL) and 479 on Situational Awareness (358 in STL). Additional training is also being provided in the scope of human resources, legal, water quality, security, technology, and operations.

Q. How do you know the commitment to safety is working?

A. Evidence of MAWC's commitment to safety can be seen through the reductions in the Company's OSHA Recordable Incident Rate (ORIR) and Days Away, Restricted or Transferred days (DART). The recordable injury three-year average ending in 2016 was 35, and, ending in 2019, it was reduced to 12. The DART three-year average ending in 2016 was 3.57, and, ending in 2019, it was reduced to 1.04. We will continue our efforts to keep everyone safe until we reach the goal of zero injuries. This success is driven by the reporting of over 1,000 near misses in 2019. The majority of Near Miss Reports are now corrected by the individual identifying the issue in the first place by resolving the issue when observed or working with the appropriate people to obtain

resources where necessary. In total, approximately 98% of all issues are corrected within 30 days of the report to eliminate the situation and/or behavior that led to the near miss situation.

Q. How does MAWC plan to continue to improve its safety performance?

A. MAWC continues to implement new initiatives each year, building on the work to date and focusing on the goals of zero work-related injuries. In 2020, MAWC is implementing standard PPE requirements for specific tasks and locations in our facilities to apply lessons learned and best practices, as well as to eliminate the situations that may have caused prior near miss reports. The objective is to apply a standard of protection that is specifically tailored to each task and each location, train all employees in that standard, and monitor compliance.

Q. Are there any efforts specific to the St. Louis County area designed to keep MAWC utility workers safe while performing their jobs?

A. Yes. There was a focused effort in St. Louis County operations to train employees on the safety/security courses mentioned above. In addition, St Louis County operations are currently using a mass communication tool, One Call Now, to communicate violent or potentially violent occurrences. Since its implementation we have had twelve occurrences reported ranging from shootings to bomb squad activity. The tool allows employees to quickly report the location and details of an occurrence to all other St Louis County employees.

Q. How has MAWC's commitment to safety benefited MAWC's customers?

A. A strong safety culture is a cornerstone for any high performing organization. A strong

safety culture also improves employee morale, as our employees know that we care for them and their families. In turn, MAWC's safety culture illustrates that our employees are thoughtful in their work, which directly benefits our customers, as safety is one part of our high performing culture. Strong safety performance reduces safety related incidents and the attendant costs, which also benefits customers. Lastly, having a workforce who is highly trained in safe practices, as well as CPR, AED, and First Aid, that interfaces daily with the public can provide added benefits to our customers.

IV. OPERATING AND MAINTENANCE (O&M) EXPENSE

Q. Please discuss some of Missouri-American's efforts to control O&M costs over the past several years.

A. Missouri-American has successfully controlled costs over the past several years. The Company's 2019 operating expenses have only increased 0.3% annually since 2010, excluding the additional O&M expense related to new acquisitions, and we are continuing our cost mitigation efforts. Had O&M expenses increased with inflation since 2010, the requested O&M expenses in the future test year would be over $12.8 million greater. While cost mitigation efforts have been successful, costs are increasing, particularly fuel, power, and employee costs, such as wages and group insurance. These increases have somewhat outstripped the continued savings we have achieved in other areas, and they too are included in our rate filing.

Q. Is the level of O&M expense requested by the Company important to its provision of safe and proper service?

A. Yes. The requested increase in O&M expense supports the Company's efforts to

continue providing high quality water and sewer service in the most cost-effective way to our customers over the long term. The Direct Testimony of MAWC witnesses Nikole Bowen and Todd Wright discuss MAWC's specific O&M pro forma adjustments in this case.

V. IMPROVING WATER EFFICIENCY

a. Water Efficiency

Q. What is water efficiency?

A. In simple terms, water efficiency means using improved practices and technologies to deliver water service more efficiently. MAWC's efforts to improve water efficiency cover a wide range, and include supply-side practices, such as water loss reduction efforts and improved meter reading, demand-side strategies, such as customer efficiency and public education programs that provides incentives to improve water and energy efficiency, and technology applications that improve access to information and analysis of data to identify opportunities for improvement. From an operations perspective, improving water efficiency requires achieving a cost-effective mix of prudent investments and improved O&M management capabilities targeting safety, customer satisfaction, sustainability, and system efficiency.

Q. Please describe some of MAWC's efforts to improve operating efficiency.

A. 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. We use various operational and efficiency reviews to further focus on improving customer service and efficiency of production and field

operations. This includes monitoring customer satisfaction, water quality complaints, customer complaints, ORIR, O&M costs, and non-revenue water ("NRW"). MAWC also continues to enhance its supervisory control and data acquisition system ("SCADA"). SCADA provides core functionality in the operation of our systems and involves routine maintenance, as well as enhancements. Having internal resources maintain and enhance this core system allows the Company to develop knowledge and expertise internally rather than relying mostly on contractors. We also leverage the size and scale of American Water to improve transactional efficiencies through increased automation, the adoption of more effective business processes, and a continuous improvement mindset.

b. Reducing Water Loss

Q. Is the Company's program to reduce water loss improving water efficiency?

A. Yes. The total volume of water loss in 2019 was over 670 million gallons less than in 2017. The Company's plan is to continue its strategic approach to reduce apparent and real losses in order to achieve its long-term goal of lowering NRW, with a particular emphasis on the more challenged districts/communities.

Q. Please describe the Company's program to reduce water loss.

A. Reducing water loss is a very complex issue with many contributing factors. To reduce water loss as effectively as possible, we need to address both apparent and real losses to mitigate unaccounted for water ("UFW"). UFW can be defined in a variety of ways

across the water industry.[3] NRW, however, is consistently calculated by subtracting the number of gallons of water sold from the number of gallons of water treated. To avoid any ambiguity, American Water, based in part on guidance from AWWA, measures its reduction in water loss in terms of NRW rather than UFW. The Company's plan is to take a more proactive approach to reduce apparent and real losses.

Q. Please describe the difference between apparent and real losses.

A. Apparent and real losses make up the two sides of the NRW equation. Apparent losses represent the difference between the gallons of water delivered and the gallons of water billed to customers. This difference can result from a variety of issues, ranging from estimated bills to theft of service. In any event, the water loss is not caused by a leak in the system. Leaks in the system are captured in real losses. Real losses reflect water treated and sent into the distribution system that is not delivered to customers. MAWC is completing annual water audits using the AWWA Water Audit Software. Completing the water audits is helping us further assess water efficiency.

Q. What has MAWC been doing to reduce apparent losses?

A. Apparent losses can be addressed by improving our implementation and execution of billing processes. One fundamental approach to mitigate apparent losses is to reduce estimated reads. An estimated read, by definition, is a calculated bill based on previous usage for that customer, which is adjusted once an actual read is obtained. Estimates

[3] The AWWA had begun to discourage the use of the term Unaccounted for Water (UFW) since 2012 because its definition is inconsistent from organization to organization. There are several opportunities for inconsistency. For example, some organizations may deduct the number of gallons lost during a known main break while other exclude gallons lost as a result of main breaks all together.

add more steps in an already long meter-to-cash billing process and can often lead to customer inquiries. Even though our statewide actual read rate was relatively high at over 98% from June of 2019 to May 2020, it still resulted in, on average, over 7,500 estimated reads on a monthly basis. Our goal is to achieve 99% or more actual reads. Conversion to advanced metering infrastructure ("AMI") water meters in St. Louis is helping improve the actual read rate and reduce apparent losses. From June 2016 to May 2017, St. Louis County had an actual read rate of 93.8%. Comparing that with the read rate from June 2019 to May 2020, there was a nearly 4% improvement to 97.7%.

One of the more challenging components of apparent loss is unauthorized consumption, in particular fire services. MAWC has both metered and unmetered fire services. In the past, not all fire services were installed with a detector meter. Currently the Company requires all fire services to be installed with a detector meter. Without a detector meter, if a customer intentionally or inadvertently taps into an unmetered fire service and uses that connection for something other than fire protection there would be no means to observe or measure the water used through that fire service. As a result, review of fire service connections and records are an ongoing task.

Q. What has MAWC been doing to reduce real losses?

A. In addition to using ISRS to support the continued accelerated replacement of aging infrastructure in St. Louis County, MAWC is also addressing real losses by enhancing its leak detection efforts throughout the state and assessing customer owned service line leaks in St. Louis County. We are using acoustic listening devices to conduct

surveys of our systems to assist in determining the condition of our buried infrastructure. Since 2017, several districts have utilized acoustic leak detection on their system to identify leaks. Most were small leaks on mains and hydrants that had not surfaced and, therefore, would likely have gone undetected and resulted in a failure that impacted service to customers. The Company's ability to proactively address these leaks saves customers from potential disruptions in service, the Company from losing millions of gallons of treated and pumped water, and both from bearing the increased costs associated with that water loss. In St. Louis County and St. Joseph, we have used in-house acoustic leak detection equipment, including leak detection loggers to listen for leaks in the system.

In 2020, MAWC began tracking more detail about customer service line leaks in St Louis County where customers own the service lines. Not owning service lines limits the Company's ability to know when or if a service line is repaired. After two and a half months of the process being implemented, over 100 customer owned service line leaks have been reported and are being tracked. Using an estimated average of 800 gallons per day per leak and the date that the leak was identified, these leaks have potentially contributed over four million gallons to NRW. With more time the program should provide a broader assessment of service lines in St Louis County; however, the challenge or repairing service lines will continue as long as customers own service lines.

Q. What is the Company's main break experience?

A. MAWC had over 3,800 water main breaks across the state during 2018, and nearly

2,500 during 2019. The volume of breaks alone is not a good indicator of the distribution system's condition, so breaks per 100 miles of pipe is the generally accepted metric used in the industry to gauge distribution system performance. On a statewide basis, MAWC experienced an annual average of 56 breaks per 100 miles of pipe in 2018 and 36 in 2019. MAWC's systems experiences have improved since 2017, but we still see roughly one- and one-half times more main breaks per year than the national average, as reported by the EPA and American Society of Civil Engineers in 2013 and 2017, respectively.

Q. Do these main breaks always result in replacement of main?

A. No. Oftentimes main breaks are addressed by repair rather than by replacing a property unit of main. In that case, the Company incurs an O&M expense for repairing that main. The number of main breaks repaired in any given year can fluctuate depending on a variety of factors, including weather. For example, in 2014 the Company experienced about 1,000 more main breaks and 14 or more breaks per 100 miles than in 2015 or 2016 due to the polar vortex. A similar phenomenon was seen in January 2018, when the Company experienced over 1300 breaks; over three times the average for January. In order to appropriately capture the level of expense necessary to repair main breaks during any given year, the Company must account for these potential fluctuations. It is doing so in this case by smoothing out variations in expense that may be related to weather and averaging its main break expense over the past three years. Company Witness Nikole Bowen provides additional detail regarding how main break expense is calculated in this case.

Q. Does the Company take any steps to proactively address main breaks?

A. Yes. MAWC uses its integrated Geographic Information System ("GIS") mapping information as part of its comprehensive review of water main breaks to identify and better prioritize areas with an abnormally high main break frequency over a defined period. Main breaks are not only costly to repair but could also interrupt service to customers or result in damage to MAWC property, customer property, and city streets. Being able to identify potential problem areas before main breaks occur could avoid catastrophic failures, reducing the cost.

Q. Does MAWC take any other steps to reduce main breaks?

A. Yes. In addition to proactively identifying and repairing leaks, a key strategy to reducing leaks is to reduce the number of main breaks in the system. Therefore, we took a closer look at how we operate the system through our pressure management program to help us further reduce main break frequency. This entailed distributing pressure sensors in the system sensitive enough to detect pressure surges lasting less than a second. The Company integrates that data into the SCADA database to correlate pressure surges caused by pump and valve operation at the plants or at booster stations. Depending on the specific details for each instance, take-away actions for identified pressure surge instances included adjustments to valve timing and operational adjustments to pump operation as well as providing more detailed data to support more targeted investment like variable frequency drive ("VFD") equipment, elevated tanks, hydro-pneumatic tanks, and surge protection valves. These changes result in reduced pressure variation in the water system, which helps further protect the system against contaminant intrusion and potentially results in fewer main breaks.

Q. Do you know of any examples where a benefit has been derived from this process?

A. Yes. An example of such an operational change is a valve timing adjustment at the Warson Woods booster station which reduced short-duration pressure variation during pump operation from a 130-psi range to a 60-psi range which reduces stresses on the pipe both at the station and within the distribution network. More proactive leak detection to identify problem areas before main breaks occur, accelerated pipeline replacement program, and controlling pressure surges are all important ways the Company is working to reduce water loss as well as the cost of repairs, restoration, and damage to property.

VI. AMI

Q. Please describe the status of implementation of MAWC's advanced metering infrastructure (AMI) program.

A. The AMI program allows remote reading of our meters at customers' homes and businesses. As of May 2020, MAWC has equipped around 90% of the meters in St Louis County with the new AMI technology. AMI units have been installed on meters currently in service, as well as on new meters replacing those that are due for replacement due to their length of service ("LOS"). Additionally, AMI has been installed in four smaller more remotely located operations, three of which were previously unmetered. This is improving water efficiency by helping the Company understand the system's NRW as well as minimizing the amount of time required to drive and read meters.

Q. Please describe results to date with AMI.

A. AMI technology is helping enable MAWC to identify meters with constant usage, show customers their usage at hourly intervals in the customer web portal (MyWater), improve communication between customers and Customer Service Representatives ("CSR") and Field Service Representatives ("FSR") when explaining usage and billing questions, and reduce the number of truck rolls to customer premises while still providing the same level of service.

Q. Is AMI improving customer service?

A. The primary drivers for deploying AMI in are to increase meter reading efficiencies and effectiveness and to transition our customers from quarterly to monthly billing. Monthly billing makes it easier for customers to manage household budgets and detect leaks sooner (potentially reducing high bills and costly damage to customers' homes). Implementation of AMI will allow MAWC to realign its business processes and redeploy personnel previously focused on meter reading to other work. AMI also enhances customer service, improves employee and public safety, and reduces costs.

Q. Are there examples of how AMI is benefitting customers?

A. MAWC is using data collected from the AMI system to identify and notify customers who demonstrate constant consumption. Constant consumption generally indicates a leak on the customer service line, an appliance or fixture that is malfunctioning (i.e. humidifiers and toilets), or a leaking irrigation system to name a few. Weekly reports are run, then letters are sent to customers who meet the criteria. Constant consumption criteria are meters showing usage for three consecutive days with a minimum of 1 CF or 5 gallons. Some exclusions include apartments with five or more living units, condo

associations or multi-family dwellings unless they are individually owned or metered. If commercial accounts are identified they are further reviewed by the major accounts manager who would then communicate with the customer. MAWC has been sending anywhere from three to five hundred letters a week. In May 2020, 1300 notification letters were sent to customers. Of these 1300 customers, 400 are no longer identified in the report as having constant consumption suggesting a success rate of nearly 30%.

AMI is also helping to troubleshoot customer concerns and be proactive to prevent future issues. As an example, a school district in St. Louis County inquired about a high bill and utilizing AMI data MAWC was able to help determine there was a leak. Since then, efforts have been made to provide notifications when one of the School District's accounts has a suspected leak allowing their staff to react quickly to address issues sooner.

Q. Is AMI improving employee and public safety?

A. Yes. Being able to read meters remotely reduces the potential risk of both injuries to our employees and injuries and damage to third parties.

Q. Is AMI affecting operational efficiency?

A. Yes. Since 2016 when AMI deployment began, over 35,000 truck rolls have been prevented because a St Louis CSR was able to successfully process work orders in the office at the same or higher level of customer service. To accomplish this, St Louis CSRs need to have current meter reading information readily available. In the past a service order would have been issued and an FSR would have driven to the premise in order to obtain a current meter reading. With AMI the CSR has this information readily

available, minimizing the need for an FSR to drive to a premise.

VII. MAINTENANCE

a. Valve Maintenance

Q. Please explain MAWC's planned valve operation program.

A. MAWC has over 127,000 production and distribution valves throughout its system and has developed a plan to inspect and operate these valves on a routine basis. MAWC also considers the criticality of its valves in prioritizing their inspection and operation. Accordingly, over the past several years, the Company has been working towards implementing a long-term inspection and operation schedule for its valves. Prior to 2018, the means for tracking valve inspections was entirely manual and not effective for field employees to conduct and report. Since then, implementation of MapCall has helped to promote more efficient inspection routing and overall inspection completion. With better tracking, we have been able to progress toward an ideal goal of nearly 28,000 valve inspections annually. In 2019 we documented approximately 44% of this goal.

Q. Why is it important to inspect valves regularly?

A. Routine valve inspection and operation minimizes the potential duration and scope of service disruptions when a main break occurs. When the Company repairs a main break, it first must isolate the area by closing off certain valves. If the nearest valve to the main break does not work, workers will need to continue searching for operable valves in order to stop the flow of water, isolate the main break, and begin making repairs. Every time a valve is found to be inoperable, crews must expand the shutdown

area and operate another three or more valves to isolate the break. This not only increases the time it takes to repair the main break, but also increases the length of time service to customers may be impacted as well as the potential number of customers whose service is affected because a larger area had to be isolated in order to make the repairs. Through a valve operation program, MAWC proactively exercises valves to ensure that they are operational if and, when they need to be opened or closed and schedule them for repair if they are not working. As explained above, this proactive approach helps to reduce the time it takes to repair a main break as well as to limit the number of customers whose service is affected by the main break.

b. Hydrant Maintenance

Q. Please describe MAWC's planned hydrant maintenance and flushing program.

A. MAWC has over 44,000 hydrants throughout its distribution systems. The primary purpose of hydrants is to suppress fires for public safety. It is critical that hydrants be inspected and operated regularly to ensure they will perform as expected in an emergency. Accordingly, MAWC is implementing an annual, instead of biennial, inspection program. In addition to annual inspections, the Company also conducts routine system flushing. Flushing scours pipes to remove sediment, scale, and biofilm and moves high-velocity water through pipes in a single direction to improve hydraulic and water quality conditions. The Company's optimal plan is to flush its system annually by flushing every other hydrant in the system each year (rotating the hydrants flushed each year), which is nearly 22,000 hydrants per year.

Finally, our hydrant maintenance program also includes routine hydrant painting.

Hydrants are one of the few above-ground facilities that we operate throughout our distribution system and, therefore, are visible to our customers. If painting is not done consistently, hydrants can develop surface corrosion that not only looks bad but can lead to performance problems in the long term if not addressed. MAWC's plan is to paint each hydrant every 20 years or approximately 2,000 hydrants each year. Some hydrants still contain lead-based paint that must be removed and disposed of in compliance with regulatory requirements. Rather than purchase all the necessary equipment to perform this work, the Company is engaging a third-party contractor with hydrant painting experience to perform hydrant painting for MAWC.

VIII. OPERATIONAL TECHNOLOGY

Q. Is MAWC using any information technology applications that are particularly useful in increasing operational efficiency?

A. Yes. In addition to Sample One View, discussed above, MAWC is primarily utilizing two applications that help optimize work assignment and completion, MapCall and Work One View ("W1V") and a third that helps optimize Field Service Representative ("FSR") engagement with customers, Customer One View ("C1V"). MapCall is the work and asset management system being used in production facilities and for T&D activities. This system supports efficiency improvement by enabling field employees to make firsthand observations and changes to assets. Supervisors can directly assign work and make changes as needed based on workload and staffing availability. W1V is the application being used by our FSRs to complete customer related work orders. This application organizes and schedules employees' daily workload. It is through this application that FSRs can connect to C1V to get detailed customer information that

wasn't readily available to FSRs in the past. This information enables an FSR to better understand the customer and their problem promoting problem resolution on the first visit. W1V also offers the means for FSRs to optimize workload by providing flexibility in handling assigned work orders. The application can help FSRs know where other FSRs are allowing them to reassign work or ask for help from someone that is closer in proximity. This can lead to reduced drive time and distances. Finally, we have replaced our legacy, unsupported employee time management system with MyTime. MyTime enhances employee time collection and reporting and contributes to improved pay accuracy. It also provides employees with a better way to record time worked and time off, including the ability to record and view time on mobile devices.

Q. How is MAWC using technology to further enhance its preventative maintenance program?

A. MAWC employees several technologies to enhance preventive maintenance. Two of the primary systems are the Work Management System (WMS), also referred to as MapCall, and Geographical Information System (GIS). The WMS provides a means to store asset information relative to each of our operations while allowing front line supervisors and maintenance personnel to create scheduled and unscheduled work orders on those assets. Information is warehoused on all asset types ranging from water treatment plant intake pumps all the way to wastewater treatment plant effluent flow meters. Enabling front line employees to document work that has been assigned to them as well as submit work requests when a maintenance need is observed in the field encourages optimal observation, assessment and action to be taken on system maintenance needs in near real time. Coupled with GIS, the WMS provides

maintenance personnel spatial interaction with asset data. Geospatial asset information that has been collected in GIS is shared with the WMS. This sharing of information allows maintenance staff to observe what work has been completed on system assets and where, a critical component to sharing historical work with others and planning current and future work. GIS is an integral tool when responding to unplanned maintenance activities as well. It enables the responding maintenance staff to effectively and efficiently locate assets that need to be operated in order to complete maintenance work such as that during a main break event.

Q. What other technology applications does MAWC expect to use in the test year?

A. We also will implement a number of new or enhanced technologies to improve customer service. Our web-based customer portal is continually being improved to allow self-service for billing, consumption information and conservation advice. We are making the portal more user friendly, accessible, and compliant with the Americans with Disabilities Act by, for example, using more graphical information.

We are upgrading our customer service infrastructure to improve interactions with customers. These upgrades include replacing our CSC call management software. Our new CSC telephone software system will improve call routing, automate many call handling tasks and use voice prompts to gather information, all of which will serve to minimize the time customers have to spend on the telephone.

Finally, CSR One View will provide CSRs access to relevant customer information more efficiently by bringing together information from multiple sources in to a single, easy to use view. This will lead to more effective customer communications, service

and outreach, as well as more effective utilization of customer service center resources. CSR One View is being integrated with the customer portal to enable communications with customers via online chat.

IX. EMPLOYEE LEVELS AND COMPENSATION

a. Employee Levels

Q. Please discuss how MAWC staffs its business operations.

A. 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, including employee costs. We recognize our duty to staff our business in a manner consistent with the provision of safe, reliable and affordable service. This requires a constant evaluation of the right mix of internal and contract labor, straight time versus overtime, training programs, and replacing labor with technology. We continue to evaluate costs and expenses going forward, always looking for the best solution for the unique and changing challenges we face. A large portion of our cost structure is for labor, and as a position becomes vacant in our organization, we look to the value of that position. We review the overall need for that position and consider, among other things, whether it should be transferred to another area, modified, or even eliminated. Cost control and improved business performance are the goals of these efforts. We continue to evaluate the new roles that will be created as new regulatory requirements are promulgated, and the appropriate positions that MAWC will need to optimize new technology and most effectively serve our customers.

Q. What is MAWC's forecasted staffing level in this case?

A. We have identified 714 full time equivalent ("FTE") employees and thirteen (13) temporary summer employees as the appropriate staffing level for the Company's water and sewer operations. The number of employees is based upon each department's and functional area's plans to continue providing safe, adequate, reliable and affordable service to our customers. Service needs and related resource requirements are consistent with meeting regulatory requirements, tariff requirements, industry standards, service requests, customer needs, and providing support to the business operations in the most cost-effective way to best serve the long-term interests of our customers. The Direct Testimony of Nikole Bowen explains how the Company's labor and labor-related costs were determined.

b. Missouri-American's Compensation Philosophy

Q. Does Missouri-American have an overall compensation philosophy?

A. Yes. Missouri-American offers compensation that has allowed it to attract and retain customer-committed, dedicated and highly qualified employees. The Company's overall compensation philosophy is to provide employees with a total compensation package that is market based and competitive with those of comparable organizations with jobs of similar responsibility. As part of its compensation philosophy, MAWC has chosen to place a portion of its compensation at risk, driving continued performance across the enterprise. Specifically, the Company targets its total direct compensation (inclusive of base and at-risk compensation) for each role near the market median (50th percentile). By using a combination of fixed and base and at-risk compensation, MAWC satisfies a dual objective of ensuring competitive market-based compensation

for all employees, while continuing to motivate employees to achieve goals that will improve performance and efficiency for the benefit of our customers.

Q. How should MAWC's employee compensation expense be assessed by the Commission?

A. Employee compensation is a cost of providing utility service, not unlike any other prudently incurred cost of service recoverable in rates. Employee compensation must therefore be assessed through the same lens as all other operating costs of the Company. Where the Company's total compensation level is in line with market, as will be demonstrated in this case, whether the compensation is fixed, or a combination of fixed and at-risk components, is irrelevant. The Company's total direct compensation expense is reasonable and prudently incurred and thus, should be recoverable like all other costs of service.

c. Market Based Total Compensation

Q. How does the Company's total compensation, including at-risk compensation, compare to the market?

A. The Company retained the services of Willis Towers Watson ("WTW") to perform a total compensation study to determine if the total direct compensation provided to Missouri-American employees, when viewed against the market of talent for employees of similar positions, is at market based on the Company's stated compensation philosophy. The findings of WTW's compensation study are detailed in the Direct Testimony of Company witness Robert V. Mustich. Therein, Mr. Mustich reached the following conclusions:

- MAWC's overall total direct compensation – which includes base compensation and all at-risk compensation – is within the competitive market range.

- American Water's short-term performance pay program (APP) is comparable to, and competitive with, plan designs of other similarly sized utilities.

- American Water's long-term performance pay (LTPP) is comparable to and competitive with plan designs of other similarly sized utilities.

- The various comparative studies performed by WTW show that MAWC's total direct compensation programs are comparable to and competitive with market practices of other similarly sized utilities and are therefore reasonable.

Q. Did Mr. Mustich reach any further conclusions regarding MAWC's compensation programs?

A. Yes. Mr. Mustich further testified that Missouri-American, like the companies it competes with for talent, must provide "a competitive total direct compensation opportunity delivered via programs that benefit employees, customers and shareholders." Mr. Mustich found that Missouri-American "attempts to achieve this goal with its balanced and competitive base salary and short-term and long-term performance compensation programs."

Q. Is providing market-based, competitive compensation to employees critical to ensure that the Company can continue to provide safe and reliable utility service?

A. Yes, it is. Recruitment of skilled workers, as well as the retention of existing trained workers, is critical to ensuring MAWC can continue to provide safe and reliable water/wastewater service for the benefit of all MAWC customers. Competition among companies to attract and retain the best and highest performing employees is keen. In recruiting new employees or retaining existing employees, both the Company and American Water compete with general industry in surrounding regions and nationally. Without the ability to provide competitive compensation and benefits, the Company would be hampered in its efforts to attract new employees and retain existing employees, particularly when competing with other utilities and other industries for this same pool of talent. This is especially true with respect to employee retention, where the loss of skilled employees imposes a real and added cost on a company, which must then recruit and train replacements.

The risk of attracting new talent and the resulting cost of doing so is further compounded by the fact that the utility industry as a whole is experiencing a disproportionate impact of our nation's aging workforce. The soon-to-retire "Baby Boomer" generation holds a wealth of knowledge and experience necessary to support the continuation of utility services, while the next generation of qualified talent is diminished in size. This presents a far greater challenge to MAWC in recruiting replacement, qualified personnel, if its total compensation is not competitive. Therefore, the Company's compensation program must provide employees with a total compensation package on par with those offered by companies with which it competes for employees.

d. At-Risk Compensation

Q. Please explain the at-risk component of the Company's total direct compensation.

A. The at-risk component of the Company's total direct compensation may be awarded under two performance plans – the Annual Performance Plan ("APP") and the Long-Term Performance Plan ("LTPP").

Q. Please describe the key performance objectives underlying the APP.

A. Management and hourly non-union employees' APP pay is based on a combination of individual performance and achievement of plan goals. Union employees' performance pay was established through collective bargaining and is based on the achievement of plan goals. For 2020, the APP goals are as follows:

STRATEGY	GOAL	TARGET
SAFETY & PEOPLE	OSHA Recordable Incident Rate	0.90
	DART Rate *(Days Away Restricted or Transferred)*	0.68
CUSTOMER	Customer Satisfaction Survey	Second Quartile in Industry Benchmarking
ENVIRONMENTAL LEADERSHIP	Drinking Water Quality	10x over Industry Average
	Drinking Water Compliance	20x over Industry Average
TECHNOLOGY & OPERATIONAL EFFICIENCY	Operational Efficiency Improvement	34.2%
GROWTH	Financial/Earnings Per Share	$3.79 - $3.89

Q. In regard to the Union participation in the APP, is there a Missouri statute that should be kept in mind?

A. Yes. I am advised that Section 386.315.1, of the Revised Statutes of Missouri, may

have some import as to this issue as it states, in part, that "In establishing public utility rates, the commission shall not reduce or otherwise change any wage rate, benefit, working condition, or other term or condition of employment that is the subject of a collective bargaining agreement between the public utility and a labor organization."

Q. Please describe the Company's LTPP.

A. American Water provides restricted stock units ("RSUs") and performance stock units ("PSUs") as long-term variable compensation under the LTPP. American Water's RSUs and PSUs are based on three-year vesting periods. RSUs are based on time-based vesting and PSUs are based on performance vesting conditions.[4]

Q. How does Missouri-American's APP and LTPP compensation plans benefit customers?

A. The Company's performance compensation plans align the interests of our customers, employees and investors. The design of the plans emphasizes customer service, environmental compliance, a safe work environment, and other operational goals, as well as certain financial goals. All of the APP and LTPP performance objectives – both operational and financial – focus employees' efforts in ways that ultimately benefit customers. The use of multiple measure further strengthens our ability to drive results across the enterprise.

Q. How do the operational goals of the APP benefit customers?

[4] American Water uses a combination of compounded earnings per share growth and relative total shareholder return ("TSR") ranking over a three-year performance period as the basis for measuring performance for PSU awards.

A. The operational goals of the APP are designed to focus plan participants on the performance results that can most directly influence customer satisfaction, health and safety, and environmental performance. Customers benefit from the plan goals because operational performance is improved by controlling costs, capturing efficiencies, promoting effective safety and risk management practices, and enhancing customer service. Performance is determined by goals that directly benefit customers by creating a more productive workforce that is focused on customer satisfaction and achieving efficiency, environmental and safety goals.

Q. How do the financial goals of the APP and the LTPP benefit customers?

A. The financial goals of the APP and LTPP benefit customers in many ways. Importantly, achieving performance pay financial goals, such as targeted earnings per share ("EPS") performance, demands the employee's attention to operating efficiency. That is, unless the utility controls its operating costs, it cannot achieve a targeted EPS. This ensures that employees at all levels of the organization remain focused on increasing efficiency, decreasing waste, and boosting overall productivity. As a result, we are able to control operating costs to the benefit of customers, because doing so mitigates the need for rate increases, and thus potentially the frequency of rate cases. Consequently, when financial performance is achieved through efficiency, as is the case for Missouri-American, the interests of customers, employees and investors are aligned.

Q. Is there other evidence of the tangible benefit to customers from MAWC's performance pay programs?

A. Yes. Again, it's important to consider the impact of a utility's financial health on its

access to capital at reasonable costs. MAWC's customers have benefitted from the Company's access to capital at favorable rates. Because utilities are capital intensive and must routinely and consistently access the capital markets at reasonable costs, customers ultimately benefit when their utility has the financial health to do so. In fact, MAWC has been able to achieve approximately $325,000 in annual interest expense savings associated with long-term debt it has refinanced since 2016.

Q. Please summarize why the Company's total direct compensation, including at-risk, performance-based compensation should be recoverable through rates.

A. The Company's at-risk, performance compensation plans align the interests of our customers, employees and investors. The market-based compensation philosophy that MAWC must offer in order to attract and retain the workforce is required to continue to provide safe and reliable service. The plans contain tangible goals that are designed to do several things, i.e., measure and compensate employees for performance based on delivering clean, safe, reliable and affordable water service and provide first in class customer service when doing so. The operational components measure performance that can most directly influence customer satisfaction, health and safety, environmental performance, and operational efficiency. Customers derive a direct benefit from our focus on these key measures in the plan. Further, the plans' well-grounded financial measures keep the organization focused on improved performance at all levels, particularly in increasing efficiency, decreasing waste, and boosting overall productivity. The Company has demonstrated that its overall compensation levels are in line with the market, and thus, are a reasonable and prudently incurred cost of service that is appropriately included in rates.

Q. Does this conclude your Direct Testimony?

A. Yes.