BEFORE THE
STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES

IN THE MATTER OF THE PETITION OF
NEW JERSEY-AMERICAN WATER COMPANY, INC.
FOR APPROVAL OF INCREASED TARIFF RATES AND
CHARGES FOR WATER AND WASTEWATER SERVICE,
CHANGE IN DEPRECIATION RATES, AND
OTHER TARIFF MODIFICATIONS

BPU Docket No. WR2401____

Direct Testimony of

Thomas Shroba

January 19, 2024

Exhibit P-4

NEW JERSEY-AMERICAN WATER COMPANY, INC.

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NEW JERSEY-AMERICAN WATER COMPANY, INC.

I. INTRODUCTION

1. Q. Please state your name and business address.

A. My name is Thomas Shroba. My business address is 1 Water Street, Camden, NJ 08102.

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

A. I am employed by New Jersey-American Water Company, Inc. ("New Jersey-American Water", "NJAWC", or the "Company") as Vice President of Operations.

3. Q. What are your responsibilities in this position?

A. As Vice President of Operations, I am responsible for leading New Jersey-American Water's operations (production, distribution, field services, construction), water quality/environmental compliance, operational risk management (safety), and business performance (collectively, "Operations") functions. I lead the Company's Operations team by providing goals and directions that strive to increase cost effectiveness, performance, customer service and service quality.

4. Q. Please describe your educational background and business experience.

A. Please refer to Appendix A for a summary of my educational background and business experience.

5. Q. Have you previously testified in regulatory proceedings?

A. Yes, I submitted direct and rebuttal testimony for New Jersey-American Water in BPU Docket Nos. WR17090985, WR19121516, and WR22010019.

6. Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to provide an overview of New Jersey-American Water's operations and discuss our commitment to water quality and environmental compliance, health and safety, and customer service, and our continuing efforts to improve water efficiency. My testimony also supports the Company's proposed staffing levels and explains our compensation philosophy.

II. OVERVIEW OF OPERATIONS AND FACILITIES

7. Q. As Vice President of Operations, are you generally familiar with New Jersey-American Water's operations and the facilities and property that the Company maintains to serve customers?

A. Yes.

8. Q. Please describe New Jersey-American Water's operations.

A. NJAWC is the state's largest water utility. As of December 31, 2023, NJAWC provides service to approximately 668,000 water and fire service customers and 64,200 wastewater service customers in approximately 200 communities in 18 counties throughout the State of New Jersey.[1] The tan, green, red and orange shaded areas in the service area map attached as Schedule TS-1 represent the

[1] NJAWC also provides water to 30 additional communities through bulk purchase water agreements.

franchise territory served by NJAWC. New Jersey-American Water's customers are served by field operations employees who report to eight operations centers located in Short Hills, Shrewsbury, Egg Harbor Township, Lawnside, Plainfield, Belle Mead, Howell, and Washington (Warren County). The operations center locations are also shown on Schedule TS-1. The operations centers are organized into four geographically based management areas (Regions). Also included on Schedule TS-1 are the regulated wastewater systems owned by NJAWC.

In addition to providing direct water and wastewater service to its customers, NJAWC also provides regional water supply and "sale for resale" water service to approximately 47 other entities throughout the state. The areas shaded in grey shown on Schedule TS-1 are served by NJAWC through bulk purchase water agreements. The Company has been, and will continue to be, committed to providing regional water supply solutions that are consistent with sound business planning and the water needs identified and coordinated through state and local planning efforts.

9. Q. Please provide an overview of the water assets and facilities of the Company, including sources of water supply, treatment facilities, pumping equipment and distribution system property.

A. NJAWC currently owns, operates, and provides service through thirty-two (32) separate public community water systems in the areas previously described. Each of the water systems includes its own source of supply, production, treatment, storage and distribution facilities. The Company operates seven surface water

treatment plants, 121 groundwater production and treatment facilities, and five raw water reservoirs with a combined capacity of 6.2 billion gallons. The average water production budget for 2022 was 287 million gallons per day ("MGD"). Within the NJAWC operations structure, the Production Department is responsible for the operations and maintenance of the sources of supply, reservoirs, treatment plants and treated water storage facilities.

In addition to these Company-owned surface water and groundwater sources of supply, NJAWC also purchases both raw water and finished (treated) water from several other water suppliers including, but not limited to the following: the Passaic Valley Water Commission ("PVWC"); the Morris County Municipal Utilities Authority ("MCMUA"); the Montclair Water Bureau; the New Jersey Water Supply Authority ("NJWSA"); and the City of Newark. The Company has 89 emergency interconnections with neighboring water purveyors to enhance reliability of NJAWC and other water systems.

10. Q. Please provide an overview of the Company's wastewater assets and facilities.

A. NJAWC currently owns and operates 29 wastewater collection systems, 22 of which also have wastewater treatment facilities. These wastewater treatment facilities incorporate membrane, sequence batch reactor or conventional activated sludge treatment technologies. 10 of the collection systems -- Lakewood, Howell (Adelphia section), Ocean City, Washington Borough (Port Colden Mall), Haddonfield, Elk Township, Egg Harbor City, Somerville Borough , Bound Brook Borough and Mt. Ephraim -- convey collected wastewater to regional wastewater

treatment facilities owned and operated by the Ocean County Utilities Authority, the Cape May County Municipal Utilities Authority, the Washington Borough Municipal Utilities Authority, the Raritan Valley Sewage authority and the Camden County Municipal Utilities Authority, respectively. A statewide wastewater management team is responsible for the remaining 22 wastewater collection and treatment systems.

11. Q. How does NJAWC manage the operations and maintenance of its water and wastewater systems?

A. Field Operations is responsible for operating and maintaining transmission and distribution assets, utility service lines, fire services, metering facilities and wastewater collection assets. In addition, Field Operations provides field-level service to customers including meter reading, service requests, and field-related collections activities. Finally, Field Operations works with the Engineering Department and new customers to provide new and replacement services and to coordinate the construction of certain new and replacement or rehabilitated distribution and wastewater collection assets.

12. Q. Please describe the work performed by the Company's Customer and Operations Support group.

A. NJAWC Operations also include a Customer and Operations Support group that is based out of our Howell, New Jersey office. This team has several responsibilities including the following: operational performance reporting, management of customer inquiries and complaints, and liaison for the Board of Public Utilities

("Board" or "BPU") contacts; special billing and collections coordination; customer service processes; employee skills training; state project management; fleet services; and liaison with the American Water national customer service center.

13. Q. Please explain Operations' role in promoting safety and a safe working environment at NJAWC.

A. Operations is responsible for administering the health and safety program, which includes the delivery of all Occupational Safety and Health Administration ("OSHA") required training, skills training and qualification of employees, physical security, cyber security, business continuity planning, and event management. We are supported by functional departments within American Water Works Service Company, Inc. ("Service Company"), such as Health & Safety, Learning & Development, Security, and Human Resources, to deliver core operations services. Safety and security metrics are tracked and reviewed monthly.

III. COMMITMENT TO WATER QUALITY AND ENVIRONMENTAL COMPLIANCE

14. Q. Please describe New Jersey-American Water's overall commitment to water quality and environmental compliance.

A. We are acutely aware that water is the only utility intended for customers to ingest, and that our customers rely on NJAWC to provide them with safe and reliable water and wastewater services. Water quality is of paramount importance to the health and well-being of our customers. Beyond health and safety, we know that

NJAWC's customers are also interested in the aesthetic qualities of the water we treat and deliver to them. We proactively look for ways to optimize treatment capabilities to continue to improve the overall quality of drinking water delivered to our customers and do so in a way that strives to create operational efficiencies that also benefit our customers. The Company's Water Quality and Environmental Compliance program is designed to support New Jersey-American Water's compliance with all drinking water quality, pollutant discharge elimination, residuals management, air pollution and hazardous materials laws and regulations.

15. Q. What specific environmental laws or regulations affect New Jersey-American Water?

A. New Jersey-American Water's operations are subject to approximately 12 major state and federal public health and environmental laws, the conformance with which is handled by the Company's Water Quality and Environmental Compliance ("WQ/EC") team. Those 12 major regulatory schemes are: (1) the federal Safe Drinking Water Act and its implementing regulations; (2) the New Jersey Safe Drinking Water Act and its implementing regulations; (3) the federal Clean Water Act and its implementing regulations; (4) the New Jersey Department of Environmental Protection ("NJDEP") Release Protection Program; (5) the federal Clean Air Act and its implementing regulations; (6) the Water Quality Accountability Act ("WQAA"); (7) the New Jersey lead service line replacement act, (8) the New Jersey Safe Dam Act; (9) the Delaware River Basin Commission regulations; (10) the New Jersey Solid and Hazardous Waste rules; (11) the federal

Resource Conservation and Recovery Act ("RCRA") and its implementing regulations; and (12) the federal Emergency Planning and Community Right-To-Know Act ("EPCRA"). NJAWC's Operations are also subject to other environmental laws, such as land use regulations, Green Acres, and the Highlands Water Protection and Planning Act.

16. Q. When the federal government has not pre-empted the field, does compliance with the federal law suffice for compliance with New Jersey law?

A. No, I am advised it does not. While there is some overlap between the state programs and federal requirements, state and local statutes and regulations can be more restrictive. New Jersey has: (1) more stringent diesel vehicle regulations than the federal Clean Air Act; (2) more stringent diesel backup generator requirements than federal regulations; (3) lower threshold quantities for hazardous materials and petroleum storage regulations; and (4) more stringent regulated drinking water contaminant standards.[2] For example, federal regulations currently set a maximum contaminant level ("MCL") for arsenic in drinking water of 10 ug/L (micrograms per liter, or parts per billion); however, the NJDEP MCL is 5 micrograms per liter, giving New Jersey the most protective arsenic drinking water standard in the nation. New Jersey also became the first state to create a binding standard for a perfluorinated compound, PFNA, setting a drinking water limit of 13 parts per trillion ("ppt"). The NJDEP was also at the forefront of per- and

[2] NJDEP has also implemented more stringent health advisory levels than the EPA for 17 volatile organic chemicals ("VOCs").

polyfluouralkyl substance drinking water standards, which at the time were the most stringent PFAS drinking water requirements in the United States. Another example is the Drinking Water Quality Institute's Final Recommendation for establishment of a 1,4-dioxane MCL equal to 0.33 parts per billion. Prior to NJDEP's official recognition of the recommended standard, NJAWC installed treatment to address this emerging compound. Installing an Advanced Oxidation Process at treatment facilities such as the Delaware River Regional Water Treatment Plant ("DRRWTP") will continue to protect public health well before regulations require routine monitoring for 1,4-dioxane.

A significant amount of work performed by the WQ/EC Team is ensuring that NJAWC keeps current with these more stringent requirements, and then designing and implementing compliance programs that minimize duplicative efforts while maintaining compliance with both the federal and state requirements. While there is little duplication in reporting requirements – typically a state agency is the primary enforcement agency for the major federal environmental laws – our operations are so pervasively regulated that the Company filed or prepared thousands of reports or other regulatory filings in 2023 to comply with the 12 different regulatory schemes outlined previously.

17. Q. Please describe New Jersey-American Water's water quality testing program under the Safe Drinking Water Act.

A. NJAWC routinely tests water in all of its Company-owned public water systems to determine if it is meeting the standards established by the federal and state

regulatory authorities. Our drinking water is tested both before and after treatment to confirm that it satisfies all chemical and bacteriological criteria. To help protect the public health, we have multiple barriers in the treatment process to help prevent contamination from reaching our customers. We test for the presence of synthetic organic chemicals, inorganic chemicals, VOCs, radionuclides, bacteria, disinfection byproducts, and all other contaminants that the regulators require us to monitor, at the frequency prescribed by the federal and state regulations and report the results of this testing to the NJDEP on a monthly, quarterly, annual, triennial, sexennial and novennial basis, in accordance with the regulations. In addition, we work with our customers to collect and analyze samples for compliance with the Lead and Copper Rule, as well as participate in the federal Unregulated Contaminant Monitoring Rule programs.

In 2022, New Jersey-American Water collected more than 50,000 water chemistry and routine bacteriological samples. Many additional samples are taken to assess process effectiveness, support pilot treatment studies, and monitor emerging contaminant threats. We also collect other bacteriological samples as needed in response to main breaks and similar emergencies. All four regions have a WQ/EC Lead who: (1) reviews regulatory documents and sampling history to determine the need and schedule for collecting specific samples; (2) coordinates with operators to verify wells and treatment plants are available for sampling based on maintenance and seasonal operating conditions, and then reconcile availability to the regulatory schedule; (3) orders sampling kits from our laboratories and prepares those kits for

operators to use in the field; (4) tracks the collection of samples by operators, the delivery of kits to laboratories, the analysis of the sample by the laboratory, and the receipt of laboratory results; (5) reviews laboratory results for compliance issues, then prepares the data for reporting to regulatory agencies; and (6) both the WQ/EC supervisor and licensed operator complete and submit an internal compliance certification form monthly to audit all regulatory sample requirements.

18. Q. Is water quality sampling the only task required to comply with the New Jersey and federal Safe Drinking Water Acts?

A. No. NJDEP also issues permits for each drinking water system, some of which contain other conditions relating to the operation of and recordkeeping for treatment plants and other facilities. The WQ/EC Team, in cooperation with Operations, works to ensure the Company is complying with those requirements and reports on our compliance as needed. In addition, there are various physical standards our facilities must meet. The WQ/EC Team inspects our facilities to confirm these physical standards are being met. The WQ/EC Team also coordinates with NJDEP to obtain regulatory approvals for the addition of new tanks, treatment plants and other facilities, or variances from approved treatment processes. The WQ/EC Team also oversees implementation of the Cross Connection Control Program to help avoid substances of an unknown quality being introduced into the distribution system by conditions on our customers' premises. Finally, the WQ/EC Team tracks the required levels of operator certifications necessary to comply with drinking

water regulations and coordinate with operations management to ensure we have proper operator staffing for our facilities.

19. Q. What new or pending environmental laws or regulations affect New Jersey-American Water?

A. In July 2021, P.L.2021, Ch.183 came into effect requiring water systems in New Jersey to identify all lead service lines[3], provide public notification regarding the presence of all lead service lines, and replace all lead service lines by 2031. This added to the teams' tracking and reporting efforts. In December 2021, the United States Environmental Protection Agency ("USEPA") finalized the Lead and Copper Rule Revisions,[4] which strengthens monitoring and standards for water systems with additional sampling and reporting requirements. NJDEP is also in the process of developing New Jersey specific requirements for the control of lead and copper, which would increase lead and copper monitoring and sampling, corrosion control, water quality parameter monitoring and treatment, source water monitoring and treatment, and public education. On March 14, 2023, the USEPA announced its proposal to develop National Primary Drinking Water Standards for 6 per- and polyfluoroalkyl substances ("PFAS"). Under this proposal, the USEPA would establish Maximum Contaminant Levels (MCLs) for PFOA and PFOS, as well as a combined Hazard Index for PFNA, PFBS, GenX, and PFHxS. On March 28,

[3] The legislation defines "lead service line" to include galvanized service lines.
[4] The USEPA has also recently issued the Lead and Copper Rule Improvements Draft as of December 6, 2023, the requirements of which the Company is still evaluating. *See* https://www.epa.gov/ground-water-and-drinking-water/proposed-lead-and-copper-rule-improvements

2023, the USEPA announced a Notice of Proposed Rulemaking that would strengthen the Consumer Confidence Report ("CCR") Rule. While the proposed rule changes are needed to help increase readability, understandability, and clarity of the reports, it also proposed to require systems serving 10,000 or more consumers to provide the reports biannually.

The ongoing regulatory changes have already added to the existing WQ/EC teams' and contractor workload. Compliance with the new regulations will continue to add to the workload moving forward. NJAWC continues to track and assess the workload to help ensure the WQ/EC Team is appropriately staffed and contractor resources are being utilized.

20. Q. Please describe NJAWC's program to comply with the National Pollutant Discharge Elimination System ("NPDES") with regard to its wastewater operations.

A. In New Jersey, the USEPA has delegated authority to issue NPDES permits ("NJPDES" permits when issued by New Jersey) to the New Jersey Department of Environmental Protection. NJAWC may partner with a contractor to: complete and submit NJPDES Permit Renewals or Modification Forms, and monthly Discharge Monitoring Reports ("DMR"), as required by each facility NPDES permit; collect, submit and oversee regulatory sample testing by an outside (third-party) laboratory for those samples required under each facility NPDES permit, but for which the local operations team is not certified to perform; and notify the NJDEP Hotline for

any event which violates, or could potentially violate, the facility's NPDES permit or applicable law.

21. Q. Is the effluent from New Jersey-American Water's wastewater operations regulated?

A. Yes, effluent from our wastewater operations is regulated under NJPDEP regulations. We monitor treated wastewater (effluent) prior to its discharge. Through a combination of physical, chemical, and biological treatment processes, the regulated constituents are removed or reduced to acceptable levels, and then discharged into the ground or appropriate waterway.

22. Q. Please describe how New Jersey-American Water manages compliance with applicable environmental laws and regulations.

A. The cornerstone of NJAWC's Water Quality and Environmental Compliance program are Environmental Management Plans ("EMPs"). An EMP is a compliance matrix that identifies a regulatory requirement, specifies the person responsible for NJAWC's compliance with that requirement, and contains information on the means the Company is using to achieve compliance. EMP reviews are conducted each quarter to ensure the information remains current. The EMPs contain the requirements for the regulatory schemes outlined previously, including specific permit conditions that regulators impose on individual equipment and facilities as well as general regulatory requirements.

23. Q. How else does New Jersey-American Water manage compliance with applicable environmental laws and regulations?

A. The Company uses a laboratory information management system ("LIMS") for managing some of the water quality data and sample reporting requirements. The LIMS sample scheduling feature provides a tool to streamline thousands of water sample tests annually and ensures that the results are tracked and reported as required by the environmental regulators. In addition, NJAWC uses MapCall, an internally-built product, to manage bacteriological sample collection, as well as other NJDEP, USEPA, and OSHA requirements, such as environmental permits, incidents, training, and lead and copper site requirements and forms. MapCall is accessible by mobile device, so samples can be collected in the field, permits can be referenced from a remote station, and any other documentation or training document can be pulled up at the time the work is being performed. Sample1View manages the scheduling, collection, analysis and reporting of bacteriological samples from utility-operated laboratories. Sample1View provides a combined view and reporting capability for bacteriological samples and the data from the LIMS system for a single view of compliance samples for a user-defined monitoring period. LIMS pre-populates state reports to enable all samples to be tracked from collection to upload in an Excel-based report. Together, these systems confirm all required samples are completed and submitted each month to help ensure environmental compliance.

24. Q. Please explain how these software systems can be used to support the Company's WQ/EC program.

A. The WQ/EC Team currently utilizes standard spreadsheet programs to track, analyze, and report the voluminous amount of data generated by the Company's operations. The amount of data the Company needs to collect grows as new regulatory requirements are added, such as for PFAS, and the additional rules the NJDEP has for cross-connection controls and the Lead and Copper rule ("LCR"). In addition, most of the regulatory schemes require NJAWC to maintain the data we collect and the reports we submit for 3 to 5 years.

The use of software systems such as LIMS, MapCall and Sample1View reduces the manual re-entry of data collected on paper forms or otherwise generated from diverse sources. They also consolidate the information into structured databases with querying and reporting tools, instead of managing it in multiple separate spreadsheets. This allows for better data analysis, which in turn supports better decision making in compliance and operating matters and makes mandatory reporting more efficient.

25. Q. Please describe NJAWC's program to manage cross connections.

A. In 2020 NJAWC enhanced its cross connection program. The enhanced cross connection program will help the Company protect its water systems and customers from the accidental introduction of contaminants by implementing a proactive program to help prevent water backflow into our networks. The NJAWC Cross Connection Control Program helps identify customers that pose an elevated risk to

distribution system water quality due to industrial or commercial use or who maintain an unapproved water supply pursuant to N.J.A.C. 7:10-10.2. In coordination with the NJDEP Physical Connection Permit Program, NJAWC's program helps ensure that the appropriate backflow prevention device is installed and tested at the appropriate frequency. The program leverages record reviews of water use surveys, plumbing sub-code permit information, State and County Well Permit data, and physical inspections to identify, prioritize and mitigate risk from the potential backflow of water from a service connection to the distribution system.

26. Q. Please describe NJAWC's efforts to protect and monitor source water.

A. NJAWC has established Source Water Protection Plans ("SWPPs"). Water Quality, Engineering, and Production teams at all surface water treatment facilities reviewed and added potential sources of significant contamination and prioritized land-, water- and transportation-based risks. Mitigation strategies were identified and assigned in the SWPPs. The plans are reviewed and updated annually, as needed. The SWPPs represent a proactive approach to lessening the likelihood and/or consequence of a source water contamination event across all regional operations and prescribe the actions to be taken if a contamination event is expected or observed.

IV. COMMITMENT TO SAFETY

27. Q. Please describe NJAWC's overall commitment to safety.

A. Protecting the health and safety of our employees and customers and the quality of the water we deliver is the top priority for our Company and is critical to our

success. Our co-workers', contractors', and customers' safety is of vital importance, and we focus on it every day. Our goal is to have every NJAWC employee get home in the same or better condition as when they came to work.

With the safety of our employees, customers, contractors, and the public in mind, we approach safety with a focus on continuous improvement through the implementation of proactive initiatives, plans, practices, and processes that complement and sustain a robust workplace safety program.

New Jersey-American Water is also committed to securing assets across our system and recognizes the importance of protecting our water sources, treatment plants, infrastructure, and data from malevolent acts, as demonstrated by our robust security and cyber security programs. In addition, the Company's emergency response program demonstrates New Jersey-American Water's recognition that rapid response and recovery from security incidents are critical to maintaining the water and wastewater systems.

28. Q. Is safety relevant to operational performance?

A. Yes. The Company considers safety to be a core value, as well as a strategy. 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, our customers and the public 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.

A. New Jersey-American Water's Safety Approach, Plans and Programs

29. Q. Please describe NJAWC's safety program.

A. The Company's safety program includes multiple activities and initiatives to maintain compliance, support employee engagement, and help ensure the safety of our workforce, our customers, and the public. The Operations Leadership Team holds biweekly safety meetings to discuss ongoing programs and the progress of initiatives. Some of the ongoing programs include:

- Peer-to-Peer Safety Observations (BAPP Teams)
- Employee Injury Review Meetings
- Pre-Job Safety Briefing completion prior to every job
- NovaCare Employee Care Program
- OSHA compliance and NJAWC required Training
- Supervisor Jobsite and Facility Inspections and Feedback
- Near miss, incident investigations
- Certified Safe Worker Program
- Stop Work Authority
- Utility Mechanic, Field Service Representative, Foreman, Construction Inspector, Operator, and Maintenance Mechanic Training
- Fleet meetings which include vehicle safety items and design reviews for new vehicles
- Accident Prevention Committee meetings

30. Q. How does NJAWC investigate injuries to help prevent future incidents?

A. For incident investigations, New Jersey-American Water utilizes a "5-Why" investigation process coupled with an enterprise-wide online tool called TapRoot®

for more significant incidents. TapRoot is a systematic process for identifying root causes of safety incidents. The 5-Why investigations must be completed within 72 hours for every injury no matter how minor, vehicle incidents, and selected near misses. A TapRoot must be completed within seven days for all OSHA recordable injuries and SIF (serious injury/fatality) potential incidents. TapRoot is also used to investigate and identify the root causes of major accidents, everyday incidents, minor near-misses, quality issues, human errors, maintenance problems, productivity issues, manufacturing mistakes, and environmental releases. The systematic TapRoot process is based on in-depth human factors and equipment reliability research. It is designed to help investigators maintain objectivity during their investigation.

The results of these investigations are then considered by the business to evaluate the incident and determine what safety process improvements may be appropriate going forward. American Water also maintains a security hotline that can be used to report a safety near miss or safety/security incident, request security system service, report or request an identification badge or report an operational event. Typically, near misses are submitted online through a link to MapCall. Employees have an 'app' on their phones that allows access in the field. They also have an option to send a text and photo to a centralized resource to enter into MapCall.

31. Q. How do you promote safety with your contractors?

A. NJAWC utilizes internal and external inspectors to help ensure our contractors are complying with all regulations and maintaining safe work environments. Our

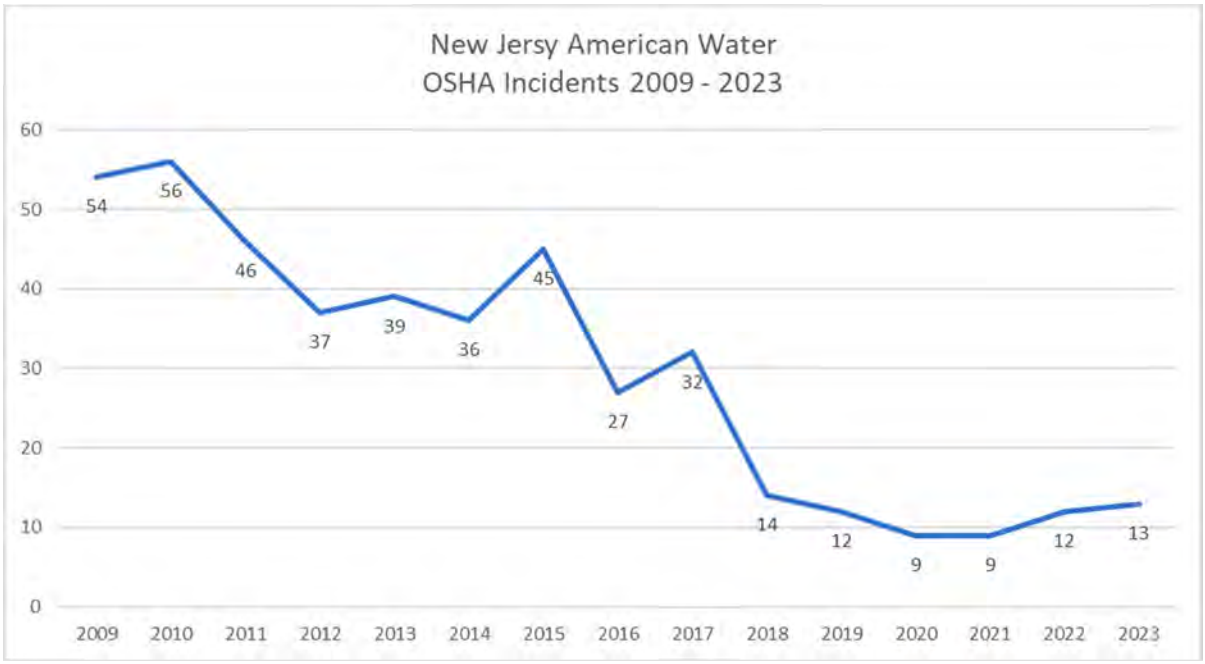
inspectors have extensive safety backgrounds and have been selected based on their safety expertise as well as their engineering knowledge. Annual meetings are held with all contractors to refresh them on NJAWC safety program requirements and introduce any new requirements added since the previous year.

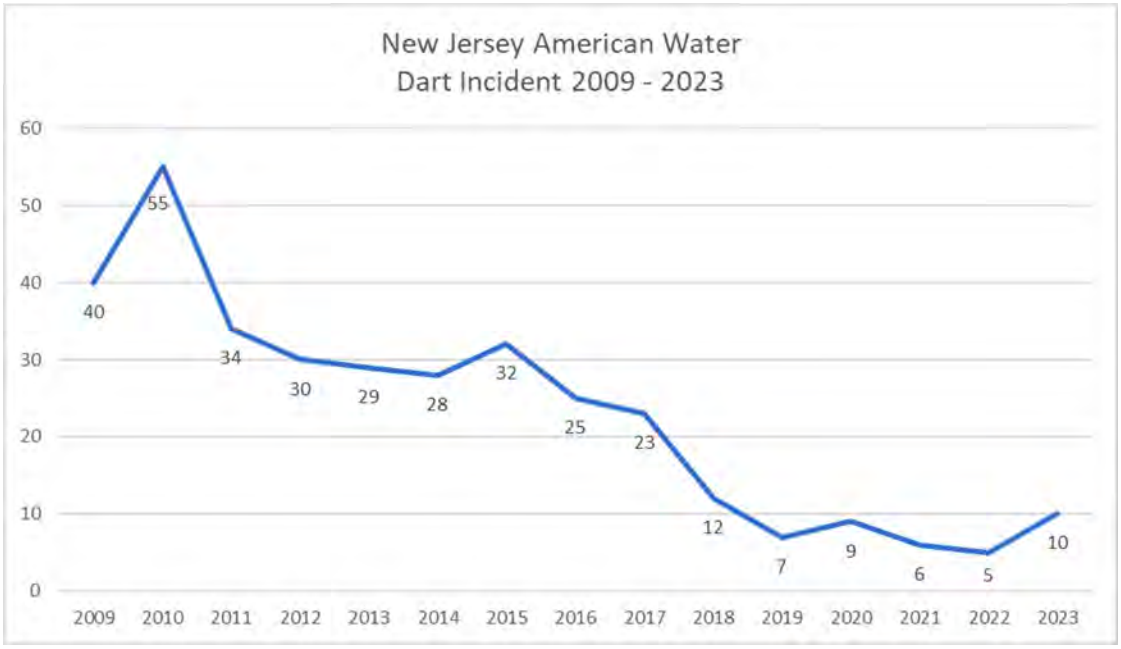
ISN is a safety prequalification program utilized by NJAWC for all contractors. Contractors must register with ISN and provide their safety documentation. ISN, with the oversight of NJAWC safety professionals, ensures contractors have all required programs and practices in place. Contractor safety includes everything from paperwork in the contractor's office to performance in the field. The ISN system helps manage New Jersey-American Water's risk and our contractors' performance by: having an ISN representative verify the contractors' data; centralizing contractor data into an easy-to-use, online database; providing contractor statistics on health, safety and environmental issues; giving contractors a personalized customer service representative to answer their questions and assist them through the process; and validating that regulatory forms and statistics are submitted properly and accurately.

32. Q. How have NJAWC's safety initiatives improved the Company's OSHA recordable injury rate?

A. New Jersey-American Water has experienced a reduction in OSHA recordable incidents since making safety a core value and strategy in 2009. As the tables below demonstrate, there has been dramatic improvement in both the OSHA recordable incident rate ("ORIR") and severity of the injuries (measured by the days away,

restricted or transferred ("DART") rate) since the implementation of our various programs and initiatives:





33. Q. Has NJAWC experienced a reduction in workers compensation claims due to the safety program and initiatives?

A. Yes, the number of claims has steadily decreased. For example, the Company has experienced 32 claims year-to-date in 2023, compared to the pre-pandemic years of 2018 and 2019 where the average number of claims was 46 claims per year.

34. Q. How do the safety programs benefit employees?

A. Employees receive direct benefits from strong safety, security, and emergency response programs. Training provides the employee with the ability to identify hazards; and incident and reporting processes allow employees to report and assist in identifying root cause and causal factors so actions can be taken to prevent accidents from occurring. The primary benefit to employees is reduction of risk of injury on the job. In addition, 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.

35. Q. How do safety programs benefit customers?

A. Customers benefit because the Company, through strong health and safety programs, has enhanced productivity and decreased absenteeism. This means that crews operate with a full staff and can fix problems more quickly, reducing any service down time to the customer. In addition, a strong safety culture also reduces safety-related incidents, resulting in lower insurance and workers compensation costs.

36. Q. How do safety programs provide an overall public benefit?

A. The public benefits from NJAWC's safety and security programs because they help us provide safe water and wastewater services. Our safe operations and compliance with occupational safety regulations provide the public with the confidence that the Company operates in a safe and secure manner. In addition, NJAWC crews operate daily in public areas and must protect their worksites from hazards as well as help shield the public from exposure to these hazards.

B. Physical Security and Cybersecurity

37. Q. What is New Jersey-American Water doing to address physical security?

A. New Jersey-American Water has taken a comprehensive approach to addressing physical security. Physical security consists of cameras, badge readers and cyber keys that monitor situations and are programmed to limit access to secure areas, including offices, shops, well sites, and treatment, pump and lift stations. New Jersey-American Water uses standards from the American Water Works Association ("AWWA") and the American Society for Industrial Security ("ASIS"). The Company has strategically placed cameras at critical infrastructure, (e.g., tank and well sites) and secure work locations (e.g., offices and shops). Cameras are connected to a secure line that provides video output to the local operations control rooms and American Water's central security and reliability control room.

Identification badges are issued for the purpose of facility access control at New Jersey-American Water. NJAWC's policy limits access to all Company-owned and

leased property to authorized persons in the conduct of official activities as approved by the local management. All employees must wear and visibly display the identification badge while on any NJAWC property, while on Company business, and while representing the Company publicly or privately. Unauthorized entries are registered as an alarm that is received by the local operations control room and American Water's Integrated Operations Center.

Electronic lock technologies are integrated at several of the Company's largest districts, with plans to expand throughout NJAWC's operations. Keys and locks are programmable with access permissions for each key holder. In addition, a key can be assigned a start and end date, and depending on the work, it can be programmed to allow access to one set of locks from 8 a.m. to 6 p.m. on weekdays and to another set of locks only from 10 a.m. to 4 p.m. on weekends. Setting short-term expiration dates is an excellent way to minimize risk due to lost or stolen keys, and programmed access further ensures the security of our facilities.

38. Q. How is cybersecurity being addressed?

A. Cybersecurity technology solutions are vital to reliable and resilient water and wastewater systems. For that reason, cybersecurity is core to the American Water vision of resiliency and sustainability. As we continue to implement intelligent water and wastewater systems, we ensure that industry-leading cyber controls are designed, built and integrated into all aspects of the technology. These controls help protect our existing systems and enable the implementation of secure innovation.

Safeguarding the integrity of Company information and systems while enhancing the customer experience is our cybersecurity mission.

The Company's cybersecurity program is consistent with industry best practices, including the National Institute of Standards and Technology ("NIST") Cybersecurity Framework and the AWWA Process Control System Security Guidance for the Water Sector.

American Water has established a close working relationship with the New Jersey Cybersecurity and Communications Integration Cell and performs all required reporting in accordance with the Water Quality Accountability Act. The Company also participates with other utilities in monthly meetings with the BPU to discuss cybersecurity issues and to share intelligence and experiences with the Board.

C. Emergency Response

39. Q. Provide an overview of the Company's emergency response program.

A. Emergency response and recovery is a critical aspect in the operation of water and wastewater systems. NJAWC maintains response plans, agency and industry emergency contacts and attends public and industry specific conferences on emergency response and preparedness in order to continually enhance and sustain Company readiness for various types of emergencies. Integration of the various responders, communications, and flows of information during an emergency or natural disaster is critical. NJAWC follows the National Incident Management

System ("NIMS") and Incident Command System ("ICS") protocols and procedures.

40. Q. How does the American Water Operations Security team and the Integrated Operations Center support the Company's security programs?

A. American Water Operations Security supports the business in the overall management of physical and cyber security systems at facilities across the country. This includes developing procedures, guidelines and training related to our security systems and processes. Operations Security also conducts internal security reviews and partners with the federal Department of Homeland Security ("DHS") on external security assessments, using the results to develop improvement initiatives and further enhance security controls of company assets and systems. In addition, the Operations Security team provides technical support and guidance to identify potential security vulnerabilities and develop appropriate solutions.

Staffed 24 hours a day, seven days a week, the Integrated Operations Center ("IOC") located in the corporate office in Camden, New Jersey monitors security cameras, alarms and incoming calls. In addition, they have access to the electronic lock technologies and can view lock and key activity. The IOC also monitors American Water security and technology systems; continuously tracks weather alerts, security threats and intelligence; and serves as a key collaboration point for operations, leadership and functional teams.

The IOC also reviews safety and security situation reports that are entered online through the security portal, which can also be used to report safety near-miss activities, safety or injury incidents, and security incidents. Additionally, the IOC has an event information hotline that is used to provide key information about facility closing and other information when an event has been declared (e.g., hurricane, snow emergency).

The Company has access to Operational Security and the IOC for assistance in the response to and recovery from an emergency event and in restoring service as quickly as possible.

41. Q. How else does American Water support the Company's security efforts?

A. American Water has developed security awareness training for physical and cybersecurity risks, incident response and emergency preparedness. This training reinforces the shared responsibility for security with all employees, contractors and visitors, and supports a safe and secure work environment. Although the Company works hard to prevent incidents from happening, it must also be prepared for their occurrence. Preparedness exercises are a powerful way to bring solid planning and years of experience to bear on the new and diverse challenges we face. American Water has led dozens of preparedness exercises across the business, while also participating in regional and national level exercises with state and federal partners.

42. Q. How does New Jersey-American Water prepare for emergencies?

A. NJAWC has established a business continuity framework, bringing functional and operational teams together for the purpose of reducing risk and enhancing resiliency. As part of the framework, the Company has adopted the nationally recognized ICS, which enables unified emergency response and close, effective coordination with emergency management in the communities we serve.

Each NJAWC district maintains an emergency response plan utilizing the NJDEP format that is reviewed annually. The emergency response plan includes: mutual aid information and procedures; system descriptions; critical system components; event management process; security; incident command system; plan development, maintenance and training; actions plans for various emergency scenarios; emergency contact lists; emergency equipment lists; sampling protocol; and other site-specific data.

Emergency response drills are conducted annually and include large system outages, contamination events, natural disasters, cybersecurity events, and environmental spills. Drills are coordinated by Operations and include on-site mock drills, tabletop exercises and after-action reporting.

43. Q. How do customers benefit from the Company's emergency response program?

A. Emergency response planning is a process that helps the Company explore vulnerabilities, make improvements, and establish procedures to follow during an emergency. It also encourages strategic partnerships and knowledge sharing

between utilities and government agencies. Preparing and practicing a response plan can save lives, prevent illness, enhance system security, minimize property damage, and maximize the resiliency of the water and wastewater service we provide to our customers. The benefits of emergency response planning were fully realized during a chemical spill event on the Delaware River. A manufacturing plant in Bristol, Pennsylvania released a surfactant chemical into a tributary of the Delaware River that had potential to impact the approximately 130,000 customers served by New Jersey American Water's Delaware River Water Treatment Plant and other neighboring purveyors along the river. The Company enacted a business continuity plan and protocols to manage the event in coordination with NJDEP, PADEP, United States Coast Guard, Delaware River Basin Commission ("DRBC"), and several state and county emergency management organizations. New Jersey American Water sampled the river, treatment systems, and distribution system over more than a four-day period to ensure the continued delivery of safe drinking water that met or surpassed state and federal standards. Through the Company's emergency response planning, partnerships with government agencies, utilities, and suppliers, and investment in our water treatment plants, not a single customer was without water throughout the event.

V. OPERATING AND MAINTENANCE EXPENSE

44. Q. What level of O&M expense is the Company seeking in this case?

A. NJAWC is seeking recovery of approximately $263.7 million in O&M expense which represents annualized expense levels through the post-test year. As NJAWC

witness Hawn explains, the Company has managed to keep the rate of increases in O&M expense below that of inflation. For example, our O&M cost per customer was $298 in 2014. If that cost were increased at the rate of inflation, it would be $401 per customer in this proceeding rather than the proposed $358 per customer, or over $31 million more of annual O&M expense than that proposed by the Company in this case. This demonstrates that the Company has been successful in controlling its O&M costs per customer over the past decade or so and is continuing to do so. The requested increases in O&M expense over these periods supported the Company's efforts to continue providing high quality water and wastewater service in the most cost-effective way to our customers in the long-term.

45. Q. Why is the Company seeking an increase in O&M expense in this case?

A. The Company is requesting an increase in O&M expense in order to continue providing high quality water and wastewater service in the most cost-effective way to our customers over the long term. The Direct Testimony of NJAWC witness Michael McKeever discusses NJAWC's specific O&M pro forma adjustments in this case. The requested increase in O&M expense is driven by increases in employee related expenses, increases in the cost of insurance other than group insurance, and increases in our production costs. Our production costs include the chemicals we use to treat water, power, water diversion fees, and waste disposal. Some of the increases in costs for chemicals and waste disposal are driven by new water and wastewater contaminant standards. The increases in insurance and production costs are not unique to NJAWC but rather are national phenomena. As

discussed later in my testimony, NJAWC mitigates these increases by leveraging the buying power and expertise of the Service Company.

VI. IMPROVING WATER EFFICIENCY

46. Q. What is water efficiency?

A. In simple terms, water efficiency means using improved practices and technologies to deliver safe, reliable and adequate water service more effectively. NJAWC's water efficiency efforts cover a wide range and include supply-side practices, such as leak detection and our geographic information system ("GIS"), as well as demand-side strategies, such as rate design and public education programs. From an operations perspective, improving water efficiency requires operational excellence, which in turn entails achieving a cost-effective mix of prudent investments and improved operations and maintenance management capabilities targeting safety, customer satisfaction, environmental compliance, sustainability, asset performance and operational efficiency. Proactive investment in these improved capabilities improves efficiency in the delivery of water and wastewater service, thus mitigating cost increases in the long run and helping keep rates affordable.

47. Q. Please describe New Jersey-American Water's efforts to improve water efficiency.

A. The Company strives to improve water efficiency through operational excellence, the use of technology, system maintenance, and efforts to manage costs as efficiently as possible to provide a more cost-effective level of service for our

customers over the long term. In addition, NJAWC uses various operational and efficiency reviews to further focus on improving customer service and efficiency of production and field operations. The Company also leverages the size and scale of American Water to improve transactional efficiencies through increased automation, the adoption of more effective business practices and a continuous improvement mindset.

A. Non-Revenue Water

48. Q. What is non-revenue water ("NRW")?

A. Non-revenue water is the difference between system delivery and water sales. Typically, NRW is measured as a volume or a percentage of system delivery based on a 12-month rolling average. Composed of several disparate elements, NRW is not just leakage; it also includes, among other things, water for firefighting, system flushing, theft, and meter inaccuracies.

49. Q. Please describe the Company's efforts to reduce its level of NRW.

A. In addition to utilizing its DSIC mechanism to accelerate the replacement of aging infrastructure in the Company's service territory, NJAWC addresses apparent and real NRW losses using various industry-endorsed processes and practices, including an annual water loss management plan, water audits, and leak detection methods that are described below.

50. Q. What is the Annual Water Loss Management Plan?

A. The Company's Annual Water Loss Management Plan incorporates water accountability and loss control processes and practices promulgated by the AWWA. The processes and practices are found in the 4th Edition of the AWWA Manual 36 publication, *Water Audits and Loss Control Programs*. Incorporated by reference is AWWA Water Audit software, currently versions 5.0 and 6.0, which includes an additional auditing capability which "grades" the validity of the water audit input data. The grading measure also provides guidance on the means to improve data collection and therefore the functionality of the water audit.

51. Q. Has NJAWC performed water audits throughout its system?

A. Yes. NJAWC has performed extensive water audits throughout its service territory. Beginning in 2013, water audits have been completed annually for systems in the jurisdiction of the DRBC.

Beginning in 2016, the Company submitted water audits to NJDEP for systems that were impacted by the NJDEP 2016 drought warning. In addition, in the latest closed calendar year (2022), the Company performed water audits for all our qualifying systems.

Thus, the Company has completed water audits of all its systems that have the proper parameters for a standard water audit – that is, 24 of 29 systems. While the Company tracks NRW performance and other indicators for every operating system, water audits have limited applicability for very small systems. Where

customer density is less than 32 connections per mile and system overall size is less than 5,000 customers, the water audit benefits are limited. This is also true for systems that have system delivery of less than 100,000 gallons per day. For these small systems, NJAWC performs a basic water balance. A basic water balance compiles system delivery and sales data for a discrete area. Both data elements are tracked over many years. Trends in the data are then used to determine if the system is operating efficiently or if there is excessive water loss which requires remedial actions.

52. Q. What indicators are reported within the water audit?

A. The water audit provides five key indicators as reported by the Reporting Worksheet of the AWWA Water Audit Software. These indicators are:

1) Apparent Losses: The sum of unauthorized consumption, customer metering inaccuracies, and systematic data handling errors;

2) Real Losses: Total water losses less Apparent Losses;

3) NRW: Total water losses including unbilled metered, unbilled unmetered, and authorized Company use;

4) Financial Indicators: NRW as a percentage by volume supplied and NRW as a percentage by cost of operating system; and

5) Operational Efficiency: Unavoidable Annual Real Losses ("UARL"), Current Annual Real Losses ("CARL"), and Infrastructure Leakage Index ("ILI") or

CARL/UARL. The indicator of system performance is the ILI. The ILI is a highly effective performance indicator for comparing (benchmarking) the performance of utilities in operational management of real losses.

53. Q. How does NJAWC use the information it gathers through its water audits to manage NRW?

A. The information gathered is analyzed and action plans are developed for NRW management and reduction as part of NJAWC's overall water loss management strategy.

54. Q. What are the main characteristics of the Company's NRW strategy?

A. The Company's NRW strategy follows the latest industry-accepted standards including the water audit methodology set out above, while also working to maximize customer satisfaction and operational efficiency at an acceptable level of risk. The key elements include the following:

1) providing accurate, regular metering of production flows and customer consumption volumes;

2) maintaining a system of real time hydraulic data collection and monitoring via SCADA, AMI, or similar system of instruments and data collection technology;

3) compiling an annual water audit as a standard business practice for qualifying systems; and

4) employing sufficient loss control methods to contain water and revenue losses at economic levels and to minimize system upsets.

55. Q. What efforts has the Company employed to align its functional areas to support the NRW efforts?

A. A team of water efficiency and planning professionals conducts the statewide water loss reporting and analysis and provides strategic guidance for water loss management activities. Beginning in 2018, Operations Project Managers within the local operations team were given the task of managing and tracking the field aspects of the NRW program. This structure allows for efficient data quality management and review of engineering opportunities and issues. Examples of these opportunities include reviewing areas of apparent high pressure to determine if additional pressure management or modulation is feasible, creation of additional district metered areas, use of innovative technologies to perform condition assessment and leak detection on transmission mains and supplementing existing leak detection tools with additional equipment. The team has direct input into Company practices on system delivery, sales and NRW. The team directly engages with the asset planning group and GIS group which results in better alignment with the planning program and capital improvement projects to support water loss management.

56. Q. What are real losses?

A. Real losses are physical losses of water from the distribution system, including leakage from pipes and any associated appurtenance and tank overflows.

57. Q. What does the Company do to reduce real losses?

A. In addition to the continued accelerated replacement of aging infrastructure supported by the DSIC, the Company is addressing real losses through its leak detection efforts. Surfacing leaks are often pinpointed by employees and are quickly repaired, resulting in improvement in reducing real losses. For subsurface leaks, the Company actively works to identify such leaks and to repair them. The Company's ability to address these leaks quickly saves customers from potential disruptions of service and avoids the increased costs associated with losing millions of gallons of treated and pumped water. Employees have been afforded technical training from both internal and external resources and have been provided with new tools to perform proactive leak work. The Company has an established internal goal of repairing 90 percent of all leaks within 96 hours of discovery. (This 96-hour time period provides the time required for mobilization and for One Call mark outs.) As a result, about 1,000 miles of mains were surveyed in 2021 and 2022. These surveys resulted in the location of over 500 leaks in 2021 and over 800 leaks in 2022. Many of these leaks had no surface indications.

58. Q. Please describe the specific methods that the Company uses to actively control leaks.

A. Leak surveying is typically done on a proactive basis when leaks are suspected to be a significant contributing factor to NRW. Focused, proactive surveys are mainly conducted in the Raritan, Essex/Passaic, and Morris/Warren Districts, where the distribution network is generally older and more prone to failure due to geographic

variations and consolidated geology. The Company also has completed numerous leak surveys of its Warren systems utilizing consultants. Currently, these systems are either proactively surveyed or continuously monitored acoustically. We have seen an immediate improvement in the systems' water losses, where leaks on our mains, hydrants, valves and both Company-side and customer-side service lines have been located. During 2021 and 2022, these efforts resulted in the identification and repair of over 1,000 leaks.

In addition, NJAWC provides more leak detection training to targeted employees across the state, and the Company has purchased additional equipment (discussed below) for continuous, proactive leak detection work in the Delaware, Coastal North and Coastal South Districts as deemed necessary. For the Essex/Passaic and Raritan Districts, the Company has increased the number of man hours spent on proactive leak surveying. The additional manpower has enabled the leak detection teams to provide multiple benefits: proactively locating leaks prior to surfacing; pinpointing leaks; and supporting permanent acoustic monitoring efforts. Additionally, leak detection on large-diameter transmission mains (water mains 16 inches in diameter and greater) and other high-risk buried linear assets, is outsourced to third-party service providers. The result of these activities contributes to the Company's prioritization of pipe rehabilitation.

59. Q. Please describe the way in which NJAWC uses technology to identify leaks.

A. The Company utilizes state of the art active listening technology for leak detection. The EchoShoreDX platform incorporates the latest generation of acoustic sensors

that are the result of Echologics' pioneering success with correlating leaks on a variety of pipe materials and large diameter mains. The sensors are built into a standard fire hydrant cap and are capable of identifying extremely faint acoustical noises emitted by leaks before they become detectable by conventional methods. This early detection capability enables the Company to prioritize repairs based on actual need and the most effective allocation of repair crews. The EchoShoreDX is stationary and designed to be deployed as continuous monitoring in an area-wide grid system. Data from the listening nodes is sent directly by cellular communications and uploaded nightly to an internet cloud-based system, processed and graphically displayed on New Jersey-American Water's GIS mapping system. The Company first installed this technology in late 2015 and has continued its deployment consistent with district planning studies, installing over 11,000 devices (nodes) throughout the state to date, (more details are available at https://www.amwater.com/njaw/about-us/environmental-stewardship/water-loss-management).

60. Q. What are apparent losses?

A. Apparent losses are non-physical losses that occur in utility operations due to customer meter inaccuracies, systematic data handling errors in customer billing systems, and unauthorized consumption. This is water that is consumed, but not properly measured, accounted for, or paid for.

61. Q. What does the Company do to manage apparent losses?

A. An internal team monitors the Company's customer database system and billing system losses. These team members look for inactive accounts/premises with consumption (or vice versa), premise mismatches, and consecutive zero consumptions. These exceptions are processed into work orders that determine and eliminate the issue that caused the exception. Currently in development is the utilization of GIS analytics to allow greater flexibility in reviewing data tables of consumption, rate class, public water system identification number ("PWSID") and pressure gradient. This initiative is in its early stages, and these tools are being customized based upon user experience and results.

62. Q. How does NJAWC's meter program help manage apparent losses?

A. The meter program is managed by our field services teams. We monitor our successful reads on a monthly basis, with a goal of minimizing estimated bills. Additionally, we perform periodic testing of meters in accordance with BPU requirements and engage in meter testing and studies to help manage apparent losses.

63. Q. Please describe how meter testing and meter studies are utilized in managing apparent losses.

A. The Company employs large meter testing and profiling, pressure zone management, and zonal metering studies, which are described below:

NEW JERSEY-AMERICAN WATER COMPANY, INC.

Large Meter Testing and Profiling

Large meter testing and profiling is conducted by both our production (bulk sales and inter-district transfers) and distribution (large customer meters) teams. All production meters are tested at least annually for flow and scaling accuracy as a best practice. The Company has also analyzed consumption patterns when requested to determine if the customers' meters are still appropriate for their current consumption rates, and if not, the installation of new meters is recommended. Moreover, where feasible, turbine meters are being replaced with more accurate compound meters.

Pressure Zone Management and Zonal Metering Studies

Pressure zone management and zonal metering studies are conducted in conjunction with each district's comprehensive planning study ("CPS") where potential opportunities exist. Pressure management helps ensure that we are providing our customers with appropriate pressures in the distribution system. When distribution system pressures are too high, background leakage occurs at a greater rate. Zonal metering is now universally supported and can help the Company determine whether smaller and very well-defined zones within the distribution system should be created. Additional metering sites connected to the SCADA system have been identified to provide additional data for compilation and analysis of NRW. This data will be utilized in determining zonal consumption patterns. The Company is exploring additional options relative to pressure management and district metering, including innovative modulation devices.

64. Q. How does the Company work to reduce unauthorized consumption?

A. Unauthorized consumption may be determined in a variety of ways. In addition to the approaches discussed above, the Company has continued its Theft of Service ("TOS") program whereby our employees are educated and encouraged to spot and report any potential water consumption that is not authorized. The TOS program enables us to find unmetered irrigation systems, bypasses, upstream (of the metering point) connections and unauthorized hydrant use, all of which contribute to NRW. Since inception of the program in July of 2008, there have been over 2,000 reports of TOS that have been successfully investigated and resolved.

65. Q. What has been the result of the Company's efforts?

A. The Company has reduced levels of NRW through its targeted and enhanced efforts at managing real and apparent losses. The focused efforts have yielded positive results, reducing statewide NRW from 16.0% to 15.5% between year-end 2020 and 2022. The Company is delivering water to more customers more efficiently every year while overcoming the challenges of a continually aging infrastructure with its proactive water loss management program. Reduced NRW lowers the utility's overall energy and chemical costs, which benefits customers. It reduces the carbon footprint of the utility and therefore helps to meet energy efficiency and air quality goals. Reduced NRW also helps maintain source water supplies, and on a site-specific basis, which could potentially lead to the deferral of capital projects for increased supplies. The efficient use of our natural resources is vital to ensuring a continued supply of clean drinking water across the state.

B. Efficiencies Arising From the Relationship With American Water

66. Q. How does NJAWC gain efficiencies from its relationship with American Water?

A. As a subsidiary of American Water, NJAWC has available to it the resources of the Service Company, which provides access to highly trained professionals who possess expertise in various specialized areas and who work exclusively for American Water's subsidiaries. The benefits and cost efficiencies provided by the Service Company are further demonstrated in the testimony of Company witness Patrick Baryenbruch. Not only does NJAWC benefit from getting these services and expertise at cost, through the size and breadth of American Water, NJAWC has continued to increase its purchasing power to obtain discounts and favorable purchasing arrangements on the equipment and supplies needed to manage and maintain our system—including pipes, fittings, and water treatment chemicals—that we otherwise would be unable to obtain were we a separately owned water system. In addition, the Company's ongoing investment in technology enables a better end-to-end view of its water and wastewater business. For example, Service Company's Information Technology Services ("ITS") team works side-by-side with end-users to develop technological solutions engineered with a focus to enhance our employees' effectiveness and to allow our customers to do business with us more easily. These products and applications are designed with ease of use in mind. They take advantage of augmented intelligence technologies that enhance

human decision making and continuously learn from their interactions with humans and the environment, meaning information evolves with usage.

67. Q. How is the American Water Supply Chain team utilized by the Company?

A. All goods and services purchased that can be leveraged across the entire American Water enterprise are done so by the Supply Chain team within Service Company ("Supply Chain") in order to maximize the purchasing power of the entire American Water enterprise. Such goods and services include but are not limited to water treatment chemicals, pipe valves and fittings, meters, engineering services, consulting services, professional services and employee benefits. The value realized from Supply Chain's work are a benefit to all American Water subsidiaries.

State-specific and regional services, which include but are not limited to infrastructure and facility maintenance and repairs, are the responsibility of the supply chain team maintained at the state level ("state Supply Chain"). The state Supply Chain's strategic objectives are to leverage state-specific requirements to obtain greatest value across the entire state or specific region(s) within the state. The goal is to obtain the highest quality services at greatest value to the state operating company.

68. Q. What are some of the significant categories in which Supply Chain managed to control costs?

A. The following areas are a representative list of ways in which the Supply Chain has worked to control the Company's costs:

NEW JERSEY-AMERICAN WATER COMPANY, INC.

Water Treatment Chemicals: Annually, Supply Chain solicits bids for all water treatment chemicals. American Water leverages the spend enterprise-wide to acquire bid prices that offer New Jersey-American Water the best possible value. In addition, Supply Chain's strong partnership with suppliers has allowed New Jersey-American Water first-in-line access to chemicals that have been in short supply over the last several years.

Maintenance Repair and Operating ("MRO") Supplies: Supply Chain is able to leverage the volumes across the entire enterprise to lower the overall costs of MRO products and maintain favorable pricing. In addition, Supply Chain is currently working with Corporate Safety on a safety product standardization project that will help ensure all American Water employees are using the appropriate Personal Protective Equipment ("PPE") while allowing Supply Chain to negotiate lower prices with suppliers for the consolidated spend.

Ductile Iron Pipe: Supply Chain leverages company volumes to secure discounts and thus minimize cost increases at a time when pricing has been increasing substantially. In addition, we have been able to secure the shortest delivery lead times in the industry. This allows New Jersey-American Water to complete more infrastructure work in a shorter time at a lower cost.

Logistics: Supply Chain is currently starting up a third-party logistics program where American Water will arrange and manage vendor freight. This program will

allow for greater control over shipping modes and lead times, as well as enjoy discounts on the cost of freight.

Fleet: In 2020, Supply Chain conducted an RFP for Fleet Management Services. The result was a change to a new fleet management company ("FMC") that offers New Jersey-American Water higher levels of service at a lower price than the previous vendor. Each year Supply Chain negotiates with all the major domestic vehicle manufacturers to secure purchase volume incentive discounts and production allocation. These discounts are in addition to the discounts already provided through our FMC company. As one of the Top 100 commercial truck fleets in the country,[5] we are to leverage our enterprise scale to achieve favorable outcomes in these negotiations.

Network Repair: In 2021, state Supply Chain competitively bid, negotiated, and established agreements for Network Repair services with a two-year term. Conducting a competitive bid exercise for these services ensured that New Jersey-American Water is receiving the most competitive pricing for these services. At the time of this writing, Supply Chain will either extend the term of the existing contracts or conduct a bid exercise for these services in 2024.

Meter Replacement Services: In 2019, state Supply Chain established two-year agreements for meter replacement services. In 2021, the existing agreements were

[5] J. Wiklund, "Top 100 Commercial Truck Fleets," *Automotive Fleet* (February 8, 2022).

extended through 2022 with no price increases. Due to market conditions, current services were extended through 2023 and again in 2024 with little increase.

Patchwork Paving Services: In 2019, state Supply Chain established two-year agreements for patchwork paving services with multiple contractors in our service territory. The agreements were extended in 2021, holding pricing flat through 2022. Due to market conditions, current services were extended through 2023 and again in 2024.

Energy: Supply Chain monitors the energy markets for buying opportunities and coordinates with NJAWC to purchase both electricity and natural gas supply for use in system operations. The goal of our collaboration is to minimize the unit price while also mitigating price risk from an extremely volatile energy market. Most recently, NJAWC purchased electric supply utilizing a reverse auction involving five suppliers in October 2019. The resulting agreement has a five-year term beginning in January 2020 and the pricing structure is 70% fixed and 30% index. The fixed/index structure is meant to provide price certainty while allowing us to participate in the daily market. The electricity market has experienced extreme volatility during the term of our agreement and the fixed price portion of the contract has mitigated the impact on NJAWC. Natural gas supply is also a key part of NJAWC's system operations, and Supply Chain works with the Company to buy natural gas supply using a dollar cost averaging approach to supply purchasing by entering the market periodically when buying opportunities exist.

In each instance, New Jersey-American Water and its customers have benefited from leveraging the size and scale of American Water enterprise wide through Supply Chain and leveraging the size and scale of NJAWC through the efforts of state Supply Chain.

69. Q. How is NJAWC using GIS to improve employee effectiveness?

A. Accurate electronic maps ensure that the Company's institutional infrastructure knowledge is readily available for use by employees. To that end, NJAWC has loaded its facilities into GIS so that maps of its water and wastewater system assets are accessible on its internal network. The information available in GIS includes the location and a short description of the facilities, giving an electronic spatial view of the entire system. GIS also helps locate customers that might be affected by related service issues and allows us to more effectively communicate with our customers. We continue to enhance our GIS platform through integration with our SAP Enterprise Asset Management ("EAM") system, our computer-aided design ("CAD") system, MapCall and our PowerPlant fixed asset records. This integration allows communication across the various platforms that makes data retrieval more efficient. The Company continues to build the GIS platform by adding new assets and retiring old assets to ensure our technicians have access to the most current information while working in the field. In 2021, the Company implemented a 'Digital As-built Workflow' that is focused on standardizing the how, what, and when GIS is updated as well as facilitating better integration between GIS and MapCall. This improved the lag time between when the asset was installed to when

GIS and other systems are updated. The goal is to keep our GIS current, complete and accurate for our end users.

70. Q. How has NJAWC benefitted from its GIS platform?

A. The GIS location information is available to technicians through asset locating tools that were deployed in 2023. The locating tool works much like google maps where a technician is guided directly to valves and service shutoffs. This is especially impactful to customers during emergencies when critical valves are obscured by landscaping, snow, or floods. The quick response using GIS information and a locating tool not only is an efficient use of labor but also limits restoration time and lost water. In addition, the location of water quality events, chlorine residuals, maintenance events and pipe failures are all plotted on GIS map layers. The spatially presented information can be used to answer customer water quality inquiries, identify trends and prioritize water main replacement projects.

The GIS system is also a tool used to assist compliance with federal and state lead service line inventory and management. Known customer and Company service line material data has been loaded into the MapCall service records that is integrated to display on the GIS maps. This will provide employees and customers with a visual representation of known and suspected lead service lines within the service territory.

71. Q. What work management system is NJAWC using to improve employee effectiveness?

A. The Company uses MapCall, a web-based application that enables Operations Production employees, Field Operations employees, and contractors to complete the lifecycle of work orders and assets in the field. Employees can view historical information including work order history on an asset, standard operating practices associated with an asset, maintenance history, O&M manuals, and tap card images. MapCall provides the flexibility to create work orders, configure workflows and report progress while in the field. For example, a supervisor can create a work order to flush a dozen hydrants in a particular area. Using MapCall, the field worker can report progress as flushing is performed, and both the supervisor and others in the field can visually see the progress made toward completing the identified work in real time through the MapCall interface. The same can be done to schedule and monitor other routine work, as well as emergency work, such as main break repairs.

MapCall also allows those in the field to communicate water quality and other events more efficiently through preloaded notifications via email to both internal and external stakeholders, including regulators, allowing workers to quickly shift back to focusing on the task at hand and providing quality service to customers.

Water main break locations are continually added to the GIS and InfoMaster a pipe replacement prioritization database, to help identify sections of pipe that have outlived their useful life. This information is used to prioritize water main replacements by strategically focusing on the pipe with the highest risk of failure.

MapCall is a "single pane of glass" for all operational needs including Health & Safety, Environmental & Water Quality and also serves as the transactional engine between other systems like Work1View.

72. Q. Please describe the Company's advanced metering infrastructure ("AMI") technology strategy.

A. New Jersey-American Water is using a "hybrid" approach to AMI deployment to leverage the fixed network technology already deployed in the short term and to transition to a modern, smart endpoint system following the 10-year length of service meter change requirements. The AMI system will not be a single technology but an integration of two technologies that provide an intelligent connection between the customer and the water utility. The systems that will be utilized are as follows:

Fixed-Network System:

With AMI fixed-network systems, meter reading is accomplished by meter transmission units ("MTU's") installed on each meter. The MTUs collect real-time water use readings from the meter and transmit them via radio signals to data collection units ("DCUs") that are owned by the utility.

The Company has approximately 224,000 Neptune R900 MTU's connected to a Fixed Network AMI system. These endpoints were installed because of previous length of service meter replacement requirements. The R900 MTU's were in use

as drive by advanced meter reading ("AMR") units and were migrated to a fixed network AMI system that can collect reads using a network of fixed antennas.

Smart Endpoints (Cellular-Network Systems):

AMI cellular-network systems utilize smart endpoint cellular endpoints installed on each meter to transmit the meter data via an existing 3rd party cellular infrastructure to a central database system for analysis and reporting.

The smart endpoint utilizes a cell-based network provided by major companies such as AT&T and Verizon to capture daily interim customer reads and eliminates the requirement of a fixed data collector network. The new smart endpoint will replace our existing R900 MTU's and are being installed following the length of service schedule over a 10-year period starting in 2022. The fixed network system will be gradually retired over the 10-year period as the smart endpoint deployment reaches saturation. The Company has approximately 69,000 Smart endpoints presently installed.

73. Q. Why is NJAWC installing AMI technology?

A. The transition to an AMI program will enable strategic and permanent improvements in safety, customer experience, operational efficiencies, and environmental benefits. The Company looks forward to leveraging AMI to empower customers with near real-time consumption data to enable smart water use choices, enhance customer communication regarding customer water consumption patterns and unusually high-water use, optimize NJAWC's ability to

measure and address non-revenue water, and improve water system operations and management, among other things. Implementation of AMI will allow NJAWC to realign its business processes and redeploy personnel previously focused on meter reading to other work, as discussed below.

74. Q. How will AMI improve customer service?

A. The implementation of AMI will increase billing accuracy and reduce the likelihood of estimated bills due to weather events by automatically providing timely, accurate reads through the network. In addition, re-reads will be reduced due to the human factor being removed from obtaining the actual read. With the planned implementation of a meter data management system starting in 2023, the Company will also be able to more efficiently collect, organize, analyze, and communicate large quantities of meter data. Customers will have access to near real-time water usage data which will allow them to identify opportunities for conservation and bill reducing tips to enable smart water use choices. AMI data can be used to uncover irregularities that may signal a leak, meter tampering or water theft. The system will enable the communication of high use water alerts and continuous flow alerts. AMI is an example of how prudent investment in technology can produce a wide range of customer benefits.

75. Q. How does AMI improve employee and public safety?

A. Having employees in the field reading meters in potentially unsafe environments, inconvenient locations, inclement weather, and exposed to vehicular traffic, animals, and the like, creates an exposure to potential injuries and accidents. Being

able to read meters remotely reduces this potential risk, both for injuries to our employees and injuries and damage to third parties.

76. Q. How will AMI benefit the environment?

A. The AMI technology helps conserve water by providing timely information to customers so they can adjust their usage and enables the early identification of customer leaks. AMI reduces fuel consumption by eliminating the need to drive by premises to collect reads. The technology will also eliminate the need to roll a truck to complete certain high volume service orders such as "Move in-Move out orders". In 2023 the Company eliminated approximately 5,000 service orders by utilizing AMI. The reduction in truck rolls and meter reading vehicles helps reduce our carbon footprint and supports New Jersey's Energy Master Plan.

77. Q. How will AMI improve water efficiency?

A. The deployment of AMI will reduce the number of full time employees needed to read meters and maintain the system. Over the next ten years, NJAWC will be able to redeploy some of the full-time positions to length of service meter replacement work and lead service line material identification requirements.

78. Q. How does NJAWC protect the data transmitted across the AMI network?

A. All of the meter reads are encrypted before they are transmitted from the meter across the Company owned network to the cellular carrier and ultimately to the Company's meter read collection database.

79. Q. How else is NJAWC using technology to improve customer service?

A. Our web-based customer portal, MyWater, has been enhanced to provide expanded self-service capabilities for online payment assistance, bill and usage review, service requests, and viewing service and emergency alerts. The portal is available 24/7 and is more user friendly, accessible, and compliant with the Americans with Disabilities Act by, for example, using more graphical information. MyWater also has a "single pane of glass" for the customer service representative and the customer. They have a greater ability to view a high bill due to a past due amount or high-water usage by month to help facilitate quicker resolutions.

The customer service infrastructure has been upgraded to improve interactions with customers and make customer information more easily accessible in the field. In addition to the tools described above, upgrades include replacing our CSC call management software and meter data management solution. Our new CSC telephone software system improves call routing, automates many call handling tasks and uses voice prompts to gather information, all of which serve to minimize the time customers have to spend on the telephone.

80. Q. Are there technology solutions NJAWC is implementing to operate systems with improved efficiency, resiliency, and security?

A. Yes. NJAWC continues to focus on Automation and Controls (also referred to SCADA) capital projects throughout our operational areas. These upgrades continue to target the installation of field instrumentation, network security devices, the replacement of legacy remote terminal units ("RTUs"), along with enhancements to human machine interface ("HMI") software, and the

standardization of data and its consolidation via high-speed connections. These upgrades have equipped our operational sites with components that provide more advanced programming and connectivity capabilities and robust security monitoring, along with redundancy to ensure operational continuity.

Focused efforts have yielded the standardization of programming to help protect operational assets along with enhancing water treatment process controls and monitoring. An example is the automation of filter controls that provide supplemental alarming and interlocks. These additional layers of protection assist in meeting all state and federal regulatory requirements while providing the best service to our customers. Implemented technologies have provided additional tools for mobile solutions for Operations, allowing for secure access to internal systems to make operational decisions. To address the increased cybersecurity threats, additional security solutions, protocols and procedures are continually being implemented to ensure that all infrastructure is properly protected and monitored.

81. Q. Are there other technology solutions NJAWC is implementing to improve water efficiency?

A. Yes. The Company is developing an advanced analytic program. The advanced analytics program utilizes QuickSight dashboards that display current data from enterprise systems (MapCall, W1V, SAP, etc.) and compares the information to targets to help measure and improve performance, capacity, quality, reliability and environmental compliance. Example reports are operations performance, health

and safety, system delivery, call center and customer results, non-revenue water, and water quality.

C. System Maintenance

82. Q. Please describe the key components of NJAWC system maintenance activities.

A. Keeping abreast of system maintenance is the hallmark of a healthy water distribution system. Among its core activities, NJAWC staff diligently completes annual maintenance programs, including length of service meter replacements, fire hydrant maintenance and valve exercising programs. These programs help us ensure that our assets are performing as expected, so that we can continue to provide the high quality, reliable service our customers have come to expect. In 2023, the Company replaced 61,064 meters, inspected approximately 50,000 fire hydrants and exercised more than 52,000 valves.

83. Q. What is the guiding document used to establish maintenance program targets?

A. NJAWC's state-wide Asset Management Plan ("AMP") is the guiding document for maintenance plan targets. The AMP was implemented by April 19, 2019, as required by the WQAA. The WQAA requires the submittal of annual capital improvement reports based on the infrastructure improvements taken from the plan. NJAWC submitted the annual capital improvement reports as required.

84. Q. Is New Jersey-American Water meeting its operational obligations under the Safe Drinking Water Act?

A. Yes. The Company certified compliance with the Safe Drinking Water Act when submitting the certification for the WQAA in December of 2023.

85. Q. What other maintenance programs support the Company's efficient operation of its system?

A. NJAWC completes several programs designed to keep its water system operating efficiently. Pipeline replacement programs annual distribution system flushing and a Condition-Based Maintenance Program are among them.

86. Q. Please explain the Condition-Based Maintenance Program.

A. NJAWC employs a Condition-Based Maintenance Program on a rotating basis at facilities where electrical equipment is used. This equipment includes pumps, motors, and electrical panels. In addition to visual, mechanical, and audible inspections, a host of other in-depth inspections are performed. For example, thermal imaging tests are performed to determine excessive heat on electrical equipment such as motors, electrical panels, transformers, and safety switches. Vibration inspections are performed to determine deflection in a pump shaft, which is an indicator of potentially damaged pump or motor bearings. The Condition-Based Maintenance Program also includes electrical tests to determine proper operation of disconnects, breakers, fuses, contactors, voltage/protective equipment devices, etc. After the inspections are performed, a report is generated that categorizes severe or critical issues for immediate attention, as well as less severe issues for subsequent attention.

87. Q. How do NJAWC's system maintenance efforts enhance operational efficiency?

A. System maintenance helps reduce failures and unexpected repairs, which are disruptive and expensive to correct. One of the byproducts of an adequately maintained system is fewer unexpected failures, which rarely occur at convenient times and, again, are costly to repair.

VII. EMPLOYEE LEVELS AND EMPLOYEE COMPENSATION

A. Employee Levels

88. Q. What is NJAWC's proposed staffing level in this case?

A. The Company has identified approximately 921.2 full time equivalent ("FTE") employees as the appropriate staffing level for the Company's water and wastewater operations, which includes part-time employees. 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. On a regular basis, monthly, quarterly, and annual performance metrics ranging from safety, customer service, financial, asset creation, asset maintenance and regulatory compliance is reviewed to ensure desired service levels and performance is achieved within each region/department. If an area is underperforming, an assessment is conducted to determine if there is a performance or resource issue. 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.

Compliance with new regulations will continue to add to the workload of the Water Quality and Environmental Compliance team moving forward. NJAWC continues to track and assess the workload to help ensure the WQ/EC Team is appropriately staffed and contractor resources are being utilized. However, headcount may need to increase to meet the proposed USEPA lead and copper rule requirements in the future. The Direct Testimony of Jamie Hawn explains how the Company's labor and labor-related costs were quantified.

89. Q. What is the basis for the Company's proposed staffing level?

A. The Company has added a total of 30 new full time equivalent ("FTE") positions. The additional employees over the staffing levels in the last case will support the increased capital investment in aging infrastructure, systems added through acquisitions, compliance with increasing water quality regulations, with a focus on employee and contractor safety. Specifically, New Jersey-American Water has added 18 field employees to support the acquisitions of Somerville, Egg Harbor City and Salem; four (4) construction inspectors related to DSIC and lead service line inspection; two (2) employees for our Uncrewed Aerial Systems; three (3) capital projects managers to advance our DSIC, lead service, and environmental compliance and resiliency IP projects, one operations supervisor for our length of service program, one contract bidder, and one executive assistant.

The Company's requested employee complement balances near-term cost control with a staffing level that, over time, provides more cost-effective water and wastewater service to our customers. This means rather than simply doing what

needs to be done to keep the water flowing and to collect and treat sewage, the Company will have the ability to provide safe, reliable and affordable service in the most cost-effective way to best serve the long-term interests of our customers.

90. Q. Is the Company undertaking any initiatives aimed at ensuring that it is attracting and retaining highly qualified and motivated employees?

A. Yes. Since 2010, American Water has deployed a succession / replenishment initiative across the enterprise, including NJAWC. This initiative is a multi-year effort that focuses on where critical business knowledge resides, and the risks regarding retirement and retention of employees who possess that critical knowledge. The program has evolved to include annual assessments of all management to identify the development requirements for future leaders. Development opportunities include position reassignments, pre-retirement position overlap, continuing education, leadership and skill training. For critical positions, we are cross training our staff to facilitate knowledge transfer and mentoring. Within the bargaining unit we have specifically developed and delivered training for new Utility Mechanics, Backhoe Operators, Field Service Representatives, Maintenance Mechanics, Construction Inspectors, and Foreperson positions. The aim is to document and effectively transfer knowledge to other and new employees over time to avoid a "knowledge vacuum" at the Company when long-tenured employees leave the business.

B. Compensation

91. Q. Please identify the various employee classifications at NJAWC and briefly describe how each group is compensated.

A. There are three classifications of employees at NJAWC: union hourly employees, non-union hourly employees, and exempt employees. As Mr. McKeever discusses in his Direct Testimony, union and non-union hourly employees receive base pay and variable pay in the form of overtime pay (in some cases shift premiums and meals) and are eligible for performance pay. Exempt employees receive base pay and are eligible for performance pay. Each classification of employees' total compensation, therefore, includes fixed pay (base pay) and some form(s) of variable pay (e.g., overtime, shift pay, or performance pay).

92. Q. Does NJAWC have an overall compensation philosophy?

A. Yes. New Jersey-American Water offers compensation that has allowed it to attract and retain 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, NJAWC has chosen to make a portion of its compensation variable, driving continued performance across the enterprise. Specifically, the Company targets its total direct compensation (base and variable compensation) for near the market median (50th percentile). By using a combination of fixed and variable compensation, NJAWC satisfies a dual objective of providing competitive market-

based compensation for our employees, while continuing to motivate employees to achieve goals that improve performance and efficiency for the benefit of our customers. We believe this approach is superior to setting base compensation targets at market median and not offering performance compensation.

93. Q. How should NJAWC's employee compensation expense be assessed by the BPU?

A. Employee compensation is a necessary cost of providing utility service, like other prudently incurred costs of service recoverable in rates. Employee compensation must therefore be assessed through the same lens as all other operating costs of the Company: if it is prudently incurred and reasonable in amount, relative to what the industry pays for the same services, it should be recoverable through rates. Where the Company's total direct compensation level is in line with the market, as will be demonstrated in this case, regardless of the combination of fixed and variable payments that the employees earn, then the Company's overall compensation expense is reasonable and prudently incurred and thus should be recoverable like all other costs of service.

94. Q. Is the Company's performance compensation program reasonable?

A. Yes. The Company retained the services of WTW to perform a total compensation study to determine if the total direct compensation provided to NJAWC employees, when viewed against the market of talent for employees of similar positions, is at market levels, based on the Company's stated compensation philosophy. The

findings of WTW's compensation study are described in the Direct Testimony of Robert V. Mustich. Therein, Mr. Mustich reached the following conclusions:

- NJAWC's target total direct compensation – which includes base compensation and all performance compensation – is within the range of the competitive market median.
- American Water's short-term performance pay program (APP), which is applicable to NJAWC, is comparable to and competitive with plan designs of other utilities.
- American Water's long-term performance pay (LTPP), also applicable to NJAWC, is comparable to and competitive with plan designs of other utilities.
- Performance compensation is required to ensure that NJAWC's compensation remains at reasonable, competitive levels.
- The analysis performed by WTW shows that NJAWC's total direct compensation programs are comparable to and competitive with market practices of other similarly-sized utilities and therefore represent reasonable, market based total compensation.
- Therefore, on a total direct compensation basis, NJAWC's compensation expense is reasonable.

95. Q. Did Mr. Mustich reach any further conclusions regarding NJAWC's compensation program?

A. Yes. Mr. Mustich further found that NJAWC, like the companies it competes with for talent, must provide a competitive total direct compensation opportunity

delivered via programs that benefit employees, customers and investors. Mr. Mustich found that NJAWC "attempts to achieve this goal with its balanced and competitive base salary and annual and long-term performance compensation programs."

96. Q. Is the totality of the Company's market based total compensation a prudently incurred expense?

A. Yes. As Mr. Mustich has demonstrated in his Direct Testimony, NJAWC's overall total direct compensation – which includes base compensation and all performance compensation – is within the competitive market range. Therefore, NJAWC's total compensation expense is reasonable and prudently incurred.

97. Q. Is providing market based, competitive compensation to employees critical to the Company's ability to 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 continuing to provide safe and reliable water and wastewater service for the benefit of all NJAWC 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 challenges associated with 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 NJAWC 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.

C. Performance Compensation Plans

98. Q. How is performance compensation provided to NJAWC employees?

A. Performance pay may be awarded under two plans – the Annual Performance Plan ("APP") and the Long-Term Performance Plan ("LTPP"). All full-time employees participate in the APP. Eligibility for the LTPP is limited to certain exempt employees.

99. Q. You say all full-time employees participate in the APP; does that include union employees?

A. Yes, it does. Our bargaining unit employees became eligible for APP in 2018, with their first payments in 2019. So, irrespective of being covered by a collective bargaining agreement, all of NJAWC's employees are entitled to the benefits of the APP.

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

A. The APP is designed to recognize and reward performance against key performance goals and targets that drive the Company's strategy.

For 2023, the APP goals are as follows:

STRATEGY	GOAL	TARGET	WEIGHT
GROWTH	EPS Range	$4.72-$4.82	50%
CUSTOMER	Customer Satisfaction	2nd Quartile	15%
SAFETY	OSHA Recordable Injury Rate (ORIR)	0.62 or less	7.5%
	Days Away, Restricted and Transfer (DART) severity rate	0.30 or less	7.5%
ENVIRONMENTAL LEADERSHIP	Drinking Water Compliance Notice of Violation (NOVs)	≤ 6 NOVs	7.5%
	Drinking Water Quality Notice of Violation (NOVs)	≤ 2 NOVs	7.5%
PEOPLE	Women Representation	Increase women representation to 25.0%	2.5%
	Ethnic and Racial Diversity Representation	Increase ethnic & racial diversity to 21.0%	2.5%

For 2024, the Growth Goal Target is EPS of $5.10-$5.20, the Customer Satisfaction Goal Target is Top Quartile, the Safety ORIR Goal Target is no fatalities (gating factor) and 0.61 or less, and the Safety DART severity rate Goal Target is 0.29 incidents or less; the Environmental Leadership and People Goals and Targets

remain the same. Another change for 2024 is the elimination of the earnings per share gating factor for APP awards.

101. Q. Please describe the 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.[6]

102. Q. How do New Jersey-American Water's performance compensation plans benefit customers?

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

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

A. The operational goals of the APP are designed to focus plan participants on the results that can most directly influence customer satisfaction, health and safety,

[6] American Water uses a combination of compounded EPS growth and relative total shareholder return ("TSR") ranking over a three-year performance period as the basis for measuring performance for PSU awards. For the portion of American Water's PSUs that are contingent on relative TSR percentile performance, American Water compares performance to its peer group.

environmental performance, and workforce diversity. Customers benefit from the plan goals because operational performance is improved by controlling costs, capturing efficiencies, promoting effective safety and risk management practices, enhancing customer service, and doing so with a diverse workforce that reflects the communities we serve. Achievement 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. For example, goals limiting the number of Notices of Violation ("NOV") for drinking water regulations help maintain a focus on providing safe and reliable water service, while goals for customer satisfaction measure the level to which customers value the activities and services performed by employees throughout the business.

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

A. The financial goals of the APP and LTPP are complementary to the operational goals and benefit customers in many ways. Achieving financial goals, such as targeted earnings per share ("EPS"), requires attention to operating efficiency. That is, unless the utility controls its operating costs, it likely will not achieve a targeted EPS. Financial goal-based performance pay thus ensures that employees at all levels of the organization, and not just the upper ranks, remain focused on increasing efficiency, decreasing waste, and boosting overall productivity. Incentivizing employees to control operating costs benefits customers, because doing so mitigates increases in costs ultimately collected in rates. Consequently, when financial performance is achieved through efficiency, as is the case for New

Jersey-American Water, the interests of customers, employees and investors are aligned.

105. Q. Does incentivizing employees to control and reduce operating costs provide other customer benefits?

A. Yes. Where NJAWC can reduce operating expenses, it can increase investment in infrastructure without increasing rates, because every dollar of operating expenses saved can fund over $8 of investment. Therefore, customers also benefit from NJAWC's enhanced ability to invest in the infrastructure that it needs to meet its service obligations to customers.

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

A. Yes. Again, it is important to consider the impact a utility's financial health has on its access to capital at reasonable rates. NJAWC'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, customers ultimately benefit when their utility has the financial health to do so at reasonable rates. Simply put, a financially healthy utility benefits customers because it enables the utility to meet its service obligations at reasonable financing costs.

107. Q. How have NJAWC's customers benefited from NJAWC's achievement of the safety, customer satisfaction and environmental leadership goals under its performance pay program from the years of 2022 to date?

A. NJAWC's performance in these areas over the last several years, incentivized by its short-term variable pay plans, makes clear the operational improvements that benefit customers. A focus on improving OSHA incidents increases safety—customer safety and employee safety. No one can credibly dispute the benefits of improved safety. OSHA recordable injuries decreased from the period from 2009 to 2017 from an average of 41 per year to an average of 11 per year for the period of 2018 – 2023. Further, reduced accidents reduce the attendant costs—workers' compensation, damage repair, etc.—which mitigates the operating costs that customers pay through rates. The Company has experienced 32 claims year-to-date in 2023, compared to the pre-pandemic years of 2018 and 2019 where the average number of claims was 46 claims per year. NJAWC continues to improve its performance in reporting near misses, another illustration of the Company's high-performing safety culture. Exceptional safety performance reflects an engaged workforce that is focused on providing safe, reliable and affordable service to NJAWC's customers.

Maintaining and improving high quality customer satisfaction and service quality also provide customer benefits. NJAWC's customer satisfaction performance goals measure customer contacts at NJAWC's call centers and in the field. They are benchmarked against other utilities' performance, as reported by third-party customer satisfaction surveys. In 2023, NJAWC ranked 2nd in the Northeast Region for customer satisfaction in J.D. Power's Water Utility Residential Customer Satisfaction Study and first among large investor-owned systems. J.D.

Power's Overall Water Utility Satisfaction Index measures key performance indicators in six areas: delivery (including quality), price, conservation, billing and payment, communications, and customer service. Customer satisfaction often goes hand-in-hand with reducing customer complaints.

108. Q. Do the Company's employees typically earn their performance compensation?

A. Yes. The Company has funded performance compensation every year for at least the past decade. The level has varied from year to year based on achievement of targets or exceeding targets, but the organization's performance has resulted in the payment of performance compensation typically equal to or greater than the target level. The Company only seeks recovery at the target level.

109. Q. Is providing appropriate levels of compensation to employees critical to the Company's ability to continue to provide safe and adequate service?

A. Yes, it is. 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. The Company's compensation program seeks to provide employees with a total compensation package on par with those offered by companies with which it competes for employees.

110. Q. Please summarize why the costs of the Company's market based total compensation, including performance-based compensation should be recoverable in rates.

A. The Company's performance compensation plans align the interests of our customers, employees, and investors. The market based total compensation philosophy that NJAWC has adopted allows the Company to attract and retain a highly qualified workforce that is essential to our ability to continue to provide safe and reliable service. The plans, themselves, 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 and wastewater service and providing good customer service when doing so. The operational components measure performance that can most directly influence customer satisfaction, safety, and environmental leadership. 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 of the organization, particularly in increasing efficiency, decreasing waste, and boosting overall productivity. Mr. McKeever addresses some of the ratemaking implications of failing to recognize these just and reasonable employee expenses. As discussed earlier, 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.

111. Q. Does this conclude your Direct Testimony?

A. Yes, it does.

NEW JERSEY-AMERICAN WATER COMPANY, INC.

Appendix A

Q. Please describe your educational background and professional associations.

A. I hold a Bachelor of Science degree from the New Jersey Institute of Technology, W-2, T-2, and professional engineering licenses. I am a member of the American Water Works Association ("AWWA").

Q. What has been your business experience?

A. I have 36 years of experience in the water industry. I joined American Water as an Engineering Technician in 1988 inspecting the construction of tanks, booster stations and transmission mains. I also worked with developers and engineers to extend the water system in our system development department. In 1997, I joined the Operations department as a Distribution Supervisor. I have held progressively responsible positions in the operations group including superintendent, manager, director and Sr. Director until being promoted to my current position as VP of operations in November of 2018.

New Jersey American Water Service Area

Schedule TS-1

NJAW WATER SYSTEMS

REGION	DISTRICT	KEY	COUNTY(IES)	WATER SYSTEM	PWSID #
NORTH	PASSAIC	1	WARREN	WASHINGTON OXFORD MANSFIELD	2121001
		2	WARREN	BELVIDERE	2103001
		3	MORRIS	ITC COUNTRY OAKS	1427017
		4	MORRIS	WEST JERSEY	1427009
		5	MORRIS ESSEX SOMERSET UNION	PASSAIC BASIN	0712001
		6	MORRIS	FOUR SEASONS	1407001
		7	PASSAIC	LITTLE FALLS	1605001
		8	SOMERSET	TWIN LAKES	1803002
		9	MORRIS	ROXBURY	1436002
CENTRAL	RARITAN	10	HUNTERDON	FRENCHTOWN	1011001
		11	HUNTERDON MIDDLESEX MERCER SOMERSET UNION	RARITAN	2004002
		12	HUNTERDON	CROSSROADS	1024001
COASTAL	COASTAL NORTH	13	OCEAN MONMOUTH	COASTAL NORTH	1345001
		14	MONMOUTH	SHORELANDS	1339001
		15	MONMOUTH	UNION BEACH	1350001
		16	OCEAN	ORTLEY BEACH	1507007
		17	OCEAN	PELICAN ISLAND	1507008
		18	OCEAN	NEW EGYPT	1523003
		19	OCEAN	DEEP RUN	1523002
SOUTH	COASTAL SOUTH	20	ATLANTIC	ATLANTIC COUNTY	0119002
		21	CAPE MAY	OCEAN CITY	0508001
		22	CAPE MAY	STRATHMERE	0511001
		23	CAPE MAY	CAPE MAY CH	0506010
		24	ATLANTIC	EGG HARBOR CITY	0107001
	SOUTHWEST	25	CAMDEN BURLINGTON	WESTERN	0327001
		26	BURLINGTON	SUNBURY	0329006
		27	GLOUCESTER	LOGAN	0809002
		28	BURLINGTON	MT. HOLLY	0323001
		29	BURLINGTON	HOMESTEAD	0318002
		30	BURLINGTON	VINCENTOWN	0333004
		31	GLOUCESTER	HARRISON TWP	0808001
		32	GLOUCESTER	BRIDGEPORT	0809001
		33	SALEM	PENNSGROVE	1707001

AW / NJAW - CONTRACT OPERATIONS

REGION	DISTRICT	KEY	COUNTY(IES)	WATER SYSTEM	PWSID #
NORTH	PASSAIC	A1	ESSEX	SOUTH ORANGE	0717001
CENTRAL	RARITAN	A2	UNION	LIBERTY	2004002
		A3	MIDDLESEX	NORTH BRUNSWICK	1215001
SOUTH	SOUTHWEST	A4	CAMDEN	CAMDEN	0408001

NJAW WASTEWATER COLLECTION SYSTEMS

REGION	DISTRICT	KEY	COUNTY(IES)	WASTEWATER SYSTEM	NJPDES #
COASTAL	COASTAL NORTH	C1	OCEAN	LAKEWOOD	NJ0265260
		C2	MONMOUTH	ADELPHIA	NJ0538391
SOUTH	COASTAL SOUTH	C3	CAPE MAY	OCEAN CITY	NJ0093880
		C9	ATLANTIC	EGG HARBOR CITY	NJ0090612
	SOUTHWEST	C4	CAMDEN	HADDONFIELD	NJ0026182
		C5	GLOUCESTER	ELK	N/A
		C6	CAMDEN	MOUNT EPHRAIM	NJ0026182
NORTH	PASSAIC	C7	MORRIS	LONG HILL TWP	NJ0024465
CENTRAL	RARITAN	C8	SOMERSET	BROUND BROOK BORO	N/A
		C8		SOMERVILLE	N/A

NJAW STATEWIDE WASTEWATER SYSTEMS (COLLECTION & TREATMENT)

REGION	KEY	COUNTY(IES)	WASTEWATER SYSTEM	NPDES #
NORTH	S1	HUNTERDON	BRASS CASTLE	NJ0068829
	S2	MORRIS	COUNTRY OAKS	NJ0108928
	S3	HUNTERDON	CROSSROADS	NJ0104396
	S4	SOMERSET	EDC	NJ0033995
	S5	HUNTERDON	FAWN RUN	NJ0058246
	S6	MORRIS	FOUR SEASONS	NJ0071013
	S7	HUNTERDON	GLEN MEADOWS	NJ0100528
	S8	WARREN	HAWK POINTE	NJ0136336
	S9	SOMERSET	HILLSBOROUGH CHASE	NJ0146102
	S10	MORRIS	JEFFERSON PEAK	NJ0133558
	S11	HUNTERDON	LOOKOUT POINTE	NJ0140571
	S12	MORRIS	MORRIS CHASE / MORRIS HUNT	NJ0053422
	S13	WARREN	PORT COLDEN MALL*	N/A
	S14	HUNTERDON	POTTERSVILLE	NJ0022781
	S15	BERGEN	RAMAPO RIVER RES.	NJ0080811
	S16	HUNTERDON	VILLAGE SQUARE	NJ0066907
SOUTH	S17	CAPE MAY	AVALON COUNTRY CLUB	NJ0069884
	S18	MONMOUTH	BEACON HILL	NJ0105228
	S19	OCEAN	DEEP RUN	NJ0080055
	S20	BURLINGTON	HOMESTEAD	NJ0098663
	S21	BURLINGTON	MAPLETON	NJ0108120

* COLLECTION ONLY

NEW JERSEY AMERICAN WATER

Long Hill WWTP & Operations Center

EDC WWTP & Operations Center

Washington Operations Center

Canoe Brook Filter Plant & Short Hills Operations Center

Raritan-Millstone Water Treatment Plant & Raritan Operations Center

Netherwood Operations Center

Swimming River Filter Plant

Canal Road Water Treatment Plant

Shrewsbury Operations Center

Belle Mead Operations Center

Jumping Brook Filter Plant

Delaware River Regional Water Treatment Plant & Delran Operations Center

Oak Glen Regional Filter Plant

NJ American Corporate Office

Lakewood Operations Center

Fire Road Operations Center

Legend

- NJAW Water & Wastewater Systems
- AW / NJAW Contract Operations
- NJAW Statewide Wastewater Systems (Collection & Treatment)
- Operations Centers / Treatment Facilities
- Municipal Boundary
- County Boundary

Critical Areas

- Zone 1 - Depleted
- Zone 2 - Depleted
- Zone 1 - Threatened
- Zone 2 - Threatened

NJAW Service Area

- North
- Central
- Coastal
- South
- Water & Sewer Systems
- Contract Ops
- Bulk Sales

0 5 10 20 Miles

Date: 9/11/2023

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