COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-	**)**	
AMERICAN WATER COMPANY FOR AN	**)**	**CASE NO. 2025-00122**
ADJUSTMENT OF RATES	**)**	

DIRECT TESTIMONY OF MICHAEL ADAMS

May 16, 2025

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Michael Adams. My business address is 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts 01752.

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

A. I am a Senior Vice President with Concentric Energy Advisors, Inc. ("Concentric"). Concentric is a management consulting and economic advisory firm focused on the North American energy and water industries. Concentric specializes in regulatory and litigation support, transaction-related financial services, energy market strategies, market assessments, energy commodity contracting and procurement, economic feasibility studies, and capital mark analyses and negotiations.

Q. What are your responsibilities in your current position?

A. As a consultant, my responsibilities include assisting clients in identifying and addressing business issues. My primary areas of focus have been regulatory-, financial-, and accounting-related issues.

Q. On whose behalf are you submitting this testimony?

A. I am submitting this testimony on behalf of Kentucky-American Water Company ("KAWC" or the "Company"), a wholly-owned subsidiary of American Water Works Company Inc. ("AWK" or "American Water").

Q. Please state your educational and professional background.

A. I have an MBA in Finance from the University of Illinois-Springfield and a BS in Accounting from Illinois College. I am a certified public accountant and a member of the American Institute of Certified Public Accountants and the Illinois Society of Certified

Public Accountants. I have over forty years of direct experience in the public utility industry. I have worked for an investor-owned utility, a regulatory agency, and most recently as a consultant. While at the Illinois Commerce Commission ("ICC"), I developed and ran a management audit function that reviewed and evaluated the management and processes of the regulated utilities in the State. Since leaving the ICC, I have provided regulatory services and support to regulated utilities and evaluated the management and operations of regulated utilities throughout the United States. I have prepared reports and/or testified as to the reasonableness of shared service functions of regulated utilities.

Q. Do you have any professional certifications?

A. Yes. I am a Certified Public Accountant.

Q. Have you previously testified in regulatory proceedings?

A. Yes. I have provided expert testimony or reports before the Arkansas Public Service Commission; the City of El Paso; the Connecticut Public Utilities Regulatory Authority, the Federal Energy Regulatory Commission (FERC); the Hawaii Public Utility Commission; the Idaho Public Utilities Commission; the Illinois Commerce Commission; the Kentucky Public Service Commission; the Maine Public Utilities Commission; the Maryland Public Service Commission; the Massachusetts Department of Telecommunications and Energy; the Missouri Public Service Commission; the New Hampshire Public Utilities Commission; the State of New Jersey Board of Public Utilities; the New Mexico Public Regulation Commission; the Oklahoma Corporation Commission; the Ontario Energy Board; the Pennsylvania Public Utility Commission; the Tennessee Public Service Commission; the Public Utility Commission of Texas; the State Corporation Commission of Virginia; and the Public Service Commission of West

Virginia. My testimonies typically address issues related to cost of service/revenue requirement, shared services, accounting and/or cost allocations.

Q. Have you previously testified as an expert witness for KAWC in any other rate cases?

A. No, I have not.

Q. Have you previously filed testimony before this Commission?

A. Yes. I have testified the Kentucky Public Service Commission on behalf of Kentucky Power Company in Case No. 2023-00159 and Duke Energy Kentucky in Case No. 2024-00354. In both proceedings my testimonies pertained to the companies' cash working capital requirements.

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

A. I am presenting the results of Concentric's evaluation of the necessity of services provided by American Water Works Service Company, Inc. ("Service Company") to KAWC and the reasonableness of the associated charges during 2024. The Service Company is a subsidiary of American Water that provides shared services to American Water's water and wastewater utility subsidiaries, including KAWC.

Q. Are you sponsoring any exhibits in your testimony?

A. Yes. I am sponsoring Exhibit MJA-1, which presents my previous affiliate transaction-related assignments, and Exhibit MJA-2, which is the Market-to-Cost Comparison of Service Company charges to KAWC during 2024.

Q. What were the objectives of your study?

A. This study was undertaken to answer the following six questions concerning the reasonableness and necessity of services provided by the Service Company to KAWC.

Reasonableness

1) Were the Service Company's charges to KAWC during 2024 reasonable compared to charges from other service companies to their regulated utility affiliates?
2) Were KAWC's 2023 total expenses, including those incurred directly by KAWC and those allocated to it by the Service Company, reasonable? This question evaluates a broader set of costs beyond Service Company charges to KAWC.[1]
3) Was KAWC charged the lower of cost or market for managerial and professional services provided by the Service Company during 2024?
4) Were KAWC's 2024 costs of Service Company's customer accounts services, including the call handling costs, comparable to those of other utilities?

Necessity

5) Are the services received from the Service Company necessary and reasonable?
6) Are the governance practices applied to total Service Company expenses and charges to KAWC appropriate?

Q. What conclusions were you able to draw concerning question number 1, whether the Service Company charges to KAWC were reasonable?

A. I concluded that the Service Company's 2024 cost per KAWC customer is reasonable. Such determination was premised on the fact that KAWC's costs are in line with the cost per customer for the proxy service companies. During 2024, KAWC was charged $84 per customer for administrative and general (A&G) related services provided by the Service Company. This compared to an average of $134 per customer for service companies reporting to the FERC. Eighteen of the 22 utility service companies that filed a FERC

[1] 2023 data was used for this comparison because at the time the report was prepared, water companies operating in Kentucky had not filed their 2024 Annual Reports with the KPSC.

Form 60 for 2023 had a higher per-customer A&G cost than KAWC's 2024 charges per customer from the Service Company.

Q. Why is a comparison of A&G costs useful to a determination of the reasonableness of the Service Company's charges to KAWC?

A. A&G-related services include managerial and professional services necessary to provide water service and are detailed below. The comparison of KAWC's costs to these provide a useful basis of comparison because the processes involved in delivering these services are similar to those found at regulated utilities across utility types.

Executive Management	Information Technology
Finance	Procurement
Accounting	Rates and Regulatory
Taxes	Legal
Financial Planning and Analysis	Human Resources
Internal Auditing	Customer Services

Q. What conclusions were you able to draw concerning question number 2, whether KAWC's 2023 total utilities expenses are reasonable?

A. I drew the following conclusions based upon my review:

- KAWC's 2023 total Customer Accounts and A&G expenses per customer were $152. Although KAWC's A&G cost per customer was above the 2023 average of $141 per customer for a comparison group of Kentucky water companies with a similar profile, five of the comparison group's fourteen water companies had a higher cost. Therefore, I concluded that KAWC's Customer Accounts and A&G expense per customer were deemed to be within a reasonable range.

- KAWC's 2023 total O&M expenses per customer was $313. This is lower than the comparison group 2023 average of $448.
- 13 of the fourteen utilities in the water companies comparison group had a higher cost than KAWC's total O&M expenses per customer. This metric reflects all expenses incurred to operate the utility and deliver service to its customers.
- Based upon the total cost comparisons developed, I concluded that KAWC's total O&M expenses were reasonable.

Q. Do the services KAWC receives from the Service Company contribute to its relatively low total O&M expenses?

A. Yes. The Service Company's services are economically beneficial to KAWC. A few benefits associated with the services provided by the Service Company include:

- Supply Chain - increased purchasing power resulted in lower costs for materials, supplies and outside services;
- Customer Service – centralized services delivered by the Service Company enable greater economies of scale and enhanced service levels;
- Field Resource Coordination – the service enables KAWC to focus its resources more efficiently and effectively;
- Belleville Lab – central lab testing services are delivered at cost by qualified analysts across the American Water footprint as opposed to each operating water company being required to provide such services;
- Accounting – work is performed by shared resources, without the need for KAWC to retain full-time staff;

- Human Resources – economies of scale are achieved through centralized payroll and benefits administration.

Q. What conclusions were you able to draw concerning question number 3, whether KAWC was charged the lower of cost or market for services provided by the Service Company?

A. I was able to draw the following conclusions:

1) KAWC was charged the lower of cost or market for managerial and professional services during 2024 by Service Company.

2) The hourly rates for outside providers were higher than the Service Company's hourly rates. On average, outside providers' total costs were approximately 50% higher than those of the Service Company.

3) The managerial and professional services provided by the Service Company were vital and could not be procured externally by KAWC without careful supervision on the part of KAWC. If these services were contracted entirely to outside providers, KAWC would need at least two positions to manage the activities of outside firms. These positions would be required to ensure the quality and timeliness of services provided by contractors.

4) If all the managerial and professional services now provided by the Service Company had been outsourced during 2024, KAWC and its customers would have incurred approximately $5.4 million in additional expenses. This amount includes the higher cost of outside providers and the cost of two new KAWC positions needed to direct, supervise and coordinate the outsourced work.

5) This study's hourly rate comparison understates the cost advantages that accrue to KAWC from its use of the Service Company. Outside service providers generally bill for every hour worked. Service Company exempt personnel, on the other hand, charge a maximum of eight hours per day even when they work more hours. If all overtime hours of Service Company personnel were factored into the hourly rate calculation, the Service Company would have had an even greater annual dollar advantage than the $5.4 million cited above.

6) It would be difficult for KAWC to find local service providers with the same specialized water and wastewater industry expertise as possessed by the Service Company staff. Service Company personnel spend substantially all their time serving operating water and wastewater companies. This specialization brings with it a unique knowledge of water and wastewater utility operations and regulation that may not be available from local service providers.

7) Service Company fees do not include any profit markup. Only its actual incurred cost of service is being recovered from KAWC customers.

Q. What conclusions were you able to draw concerning question number 4, whether the 2024 costs of the Service Company's customer account services, including call handling costs were reasonable?

A. The costs of the Service Company's customer account services were reasonable. Such costs are below the average of the neighboring electric utility comparison group. This group of companies provides a reasonable proxy group for comparison to a regulated utility of the size and scope of the Service Company and KAWC. During 2024, the cost of customer accounts services for KAWC customers was $25.03 per customer compared to

the projected 2024 average of $28.09 per customer for neighboring electric utilities. Fifteen of the comparison group's 27 utilities had a higher cost than KAWC.

Q. What conclusions were you able to draw concerning question number 5, whether the services KAWC receives from the Service Company are necessary?

A. Based upon the review, Concentric arrived at the following conclusions:

1) The services that the Service Company provides are necessary and required for a water and wastewater utility.

2) There is no redundancy or overlap in the services provided by the Service Company to KAWC.

Q. Regarding question number 6, what are such governance practices and are the governance practices applied to total Service Company expenses and charges to KAWC appropriate?

A. Governance practices are internal controls designed to provide assurance that objectives are being achieved relating to operations, reporting and compliance. Among other things, this is achieved through control activities, which are defined as follows:

> *Control activities are the actions established through policies and procedures that help ensure that management's directives to mitigate risks to the achievement of objectives are carried out. Control activities are performed at all levels of the entity, at various stages within business processes, and over the technology environment.*
>
> Source: "Internal Control – Integrated Framework, Executive Summary," Committee of Sponsoring Organizations of the Treadway Commission.

Control activities include authorizations, approvals, verifications and business performance reviews.

Q. What governance practices are applied to Service Company services and charges?

A. Control activities that are applied to Service Company charges to KAWC include the following:

- Chief Operating Officer Oversight
- Operating Company Board Oversight
- KAWC President's Oversight
- CFO Operations and Supporting Staff
- Service Company Budget Review/Approval
- Major Project Review and Approval
- Capital Program Management (CPM)
- Accounting and Financial Reporting Processes
- Operating Company Budget Variance Analysis
- Service Company Budget Variance Analysis

Such control activities are typical of those that are in place at other well-managed companies that I have reviewed. In my opinion these are effective practices that help ensure that Service Company charges to KAWC are necessary and reasonable.

Q. What is your overall conclusion regarding the services provided by Service Company to KAWC and the cost of those services?

A. The Service Company's services are essential to KAWC's ability to deliver water and wastewater service to its customers. These services are customarily provided by other utility service companies to their operating utility affiliates. For each cost comparison I performed, the Service Company's 2024 charges were shown to be reasonable.

Q. What were the bases for your conclusion?

A. My conclusions were based on the various analyses discussed herein and my attached report.

Q. Does this conclude your prepared direct testimony?

A. Yes, it does.

VERIFICATION

STATE OF ILLINOIS)
) **SS:**
COUNTY OF SANGAMON)

The undersigned, Michael Adams, being duly sworn, deposes and says that he is the Senior Vice President with Concentric Energy Advisors, Inc., that he has personal knowledge of the matters set forth in the accompanying testimony for which he is identified as the responsible witness, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.

Michael Adams

Michael Adams

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 10th day of May, 2025.

Shelby A Graham

Notary Public

My Commission Expires:

4/17/2029

OFFICIAL SEAL
SHELBY A GRAHAM
Notary Public, State of Illinois
Commission No. 1008699
My Commission Expires
April 17, 2029

Previous Affiliate Transaction Related Experience

Company Name	Description of Work
Atlanta Gas Light Company	Reviewed AGSC's staffing and services after the acquisition of Nicor and prepared a synergy savings report that was filed with the Georgia Public Service Commission.
Nicor Gas Company	Prepared a triennial cost study that was filed with the Illinois Commerce Commission which was a condition associated with the merger approval proceedings in Docket No. 11-0046.
Montana Dakota Utilities ("MDU")	Performed a study of MDU's current method of allocating and assigning the costs associated with corporate and affiliate services. MDU filed a general electric rate case in North Dakota in Case No. PU-10-124 in April 2010. The North Dakota Public Service Commission approved three settlement agreements between the Company and the PSC Advocacy Staff. As part of a November 8, 2010 Settlement Agreement, MDU agreed to perform certain studies before filing its next general rate case and such studies were to be conducted by a mutually agreeable independent consultant. The Cost Allocation Study entailed a review of the corporate allocation process and the affiliate transactions used to allocate costs associated with MDU Resources and other affiliates to MDU's gas and electric operations.
Baltimore Gas & Electric Company ("BG&E")	Reviewed BG&E's cost allocation policies and procedures associated with shared services provided by the parent company to the regulated utility. Provided expert testimony on behalf of BG&E regarding its cost allocation practices, their consistency with industry norms, and a comparison of BG&E's cost structure to comparable regulated utilities.
Bay State Gas Company	Performed an analysis of the impact of the Northern Utilities, Inc. sale on Bay State Gas Company costs. Reviewed Bay State Gas Company's cost of service, as it related to services provided (a) between Bay State and Northern and by NCSC to Bay State and Northern to determine the impact of the Northern sale on Bay State's cost of service.
Interstate Power & Light Company	Worked closely with executive management to prepare the company for a management audit and to develop a consistent, constructive approach to addressing key findings and recommendations by the audit firm. The pre-audit process conducted by Concentric covered areas of corporate governance, shared services, energy delivery operations and customer service functions, and supply procurement. Among Concentric findings were recommendations relative to certain aspects of organizational

Previous Affiliate Transaction Related Experience

Company Name	Description of Work
	structure, and the resulting inter-jurisdictional cost allocations. We benchmarked these costs across the company's industry peers, which provided management with the insight necessary to initiate structural changes that would impact costs within the jurisdiction under audit. We also benchmarked the company's transmission, distribution and generation performance and operating costs across an array of metrics.
Ameren Illinois	Performed a review of the reasonableness of the allocation of shared services costs assigned by Ameren Service Company to the Illinois operating utilities. The review included an assessment of the reasonableness of the accumulated costs, allocation factors employed and resulting allocated costs to each operating utility for the services provided. We also benchmarked the costs of services to assess the reasonableness of the allocated costs compared to other companies. Concentric provided expert testimony in support of the analyses.
Ameren Missouri	Provided testimony analyzing the services and related costs provided by companies affiliated with Ameren Missouri.
Palo Verde Nuclear Generating Station	Performed a review of the methodology employed by Arizona Public Service to allocate costs to Palo Verde, a three-unit nuclear power plant, and ultimately to the other owners of the facilities in accordance with the owners' participation agreement. The review included an assessment of the nature and cost allocation associated with direct services provided to the owners by Palo Verde staff as well as corporate services provided to the plant and the allocation of such services to the owners. We performed cost benchmarking and provided the owners with a detailed cost allocation model to test the sensitivity of cost levels to various cost drivers.
AEP ETT	Concentric performed and prepared testimony and a report pertaining to the Company's cost of services provided by AEP to an affiliated company (ETT). The study assessed the reasonableness of the services provided to ETT and the cost of such services compared to those of similarly situated companies. Prepared testimony and a report summarizing the results of the review. The report and testimony were filed before the Public Utilities Commission of Texas.

MARKET-TO-COST COMPARISON OF SERVICE COMPANY CHARGES TO KENTUCKY-AMERICAN WATER COMPANY

12 MONTHS ENDED DECEMBER 31, 2024

PREPARED FOR:
KENTUCKY-AMERICAN WATER COMPANY

MAY 16, 2025

CEADVISORS.COM

TABLE OF CONTENTS

LIST OF TABLES

SECTION 1:
INTRODUCTION

Purpose of This Study

This Market-to-Cost Comparison of 2024 Service Company Charges to Kentucky-American Water Company ("KAWC") study was undertaken to answer six questions concerning the services provided by American Water Works Service Company, Inc., ("Service Company") to KAWC:

Reasonableness

1. Were the Service Company's charges to KAWC during 2024 reasonable compared to charges from other service companies to their regulated utility affiliates?
2. Were KAWC's 2023 total expenses, including those incurred directly by KAWC and those allocated to it by the Service Company, reasonable? This question evaluates a broader set of costs beyond Service Company charges to KAWC.
3. Was KAWC charged the lower of cost or market for managerial and professional services provided by the Service Company during 2024?
4. Were 2024 costs of Service Company's customer account services, including call handling expenses, comparable to those of other utilties?

Necessity

5. Are the services KAWC receives from the Service Company necessary and reasonable?
6. Are the governance practices applied to total Service Company expenses and charges to KAWC appropiate?

Study Results

Concerning question 1, the following conclusion was reached:

- The Service Company's 2024 cost per KAWC customer is reasonable compared to costs per customer for electric and combination electric/gas service companies. During 2024, KAWC was charged $84 per customer for administrative and general ("A&G")-related services provided by the Service Company. This compares to an average of $134 per customer for service companies reporting to the Federal Energy Regulatory Commission ("FERC"). Eighteen of the 22 utility service companies that filed a FERC Form 60 for 2023 had higher per-customer A&G costs than KAWC's 2024 charges from the Service Company.

Question 2 extends the reasonableness test to two broader sets of expenses--total Customer Accounts/A&G expenses and Total Operations and Maintenance (O&M) expenses. The following conclusions were reached:

- KAWC's 2023 total Customer Accounts and A&G expenses per customer are $152. This is above the 2023 average of $141 per customer for a comparison group of Kentucky water companies with a similar profile. Five of the comparison group's 14 water companies have a higher cost.
- KAWC's 2023 total O&M expenses per customer are $313. This is lower than the comparison group 2023 average of $448. Thirteen of the comparison group's 14 water companies had a higher cost. KAWC can achieve lower O&M expenses thanks to the services it receives from the Service Company. Examples of just a few of these economically beneficial services include the following:
    - Supply Chain - increased purchasing power results in lower costs for materials, supplies and outside services
    - Customer Service – centralized services delivered by shared resources enable greater economies of scale and enhanced service levels
    - Field Resource Coordination - enables KAWC to focus its resources more efficiently and effectively
    - Belleville Lab – central lab testing services are delivered at cost by qualified analysts
    - Accounting – work is performed by shared resources, without the need for KAWC to retain full-time staff
    - Human Resources – economies of scale are achieved through centralized payroll and benefits administration
- Based upon the total cost comparisons developed for this question, it can be concluded that KAWC's total costs are reasonable.

Concerning question 3, the following conclusions were reached from this study:

- KAWC was charged the lower of cost or market for managerial and professional services during 2024.
- On average, the hourly rates for outside service providers are 50% higher than the Service Company's hourly rates. Consequently, the Company obtains services from the Service Company that are considerably below the market prices for such services.

- The managerial and professional services provided by the Service Company are vital and could not be procured externally by KAWC without careful supervision on the part of KAWC. If these services were contracted entirely to outside providers, KAWC would have to add at least two positions to manage the activities of outside firms. These positions would be required to ensure the quality and timeliness of services provided.
- If all the managerial and professional services now provided by the Service Company had been outsourced during 2024, KAWC and its customers would have incurred approximately $5.4 million in additional expenses. This amount includes the higher cost of outside providers and the cost of two new KAWC positions needed to direct the outsourced work.
- This study's hourly rate comparison understates the cost advantages that accrue to KAWC from its use of the Service Company. Outside service providers generally bill for every hour worked. Service Company exempt personnel, on the other hand, charge a maximum of eight hours per day even when they work more hours. If all overtime hours of Service Company personnel were factored into the hourly rate calculation, the Service Company would have had an even greater annual dollar advantage than the $5.4 million cited above.
- It would be difficult for KAWC to find local service providers with the same specialized water and wastewater industry expertise as that possessed by the Service Company staff. Service Company personnel spend substantially all their time serving operating water and wastewater companies. This specialization brings with it a unique knowledge of water and wastewater utility operations and regulation that may not be available from local service providers.
- Service Company fees do not include any profit markup. Only its actual cost of service is being recovered from KAWC customers.

Concerning question 4, the following conclusion was reached:

- The costs of the Service Company's customer accounts services were reasonable in 2024. Such costs are about the same as the average of the neighboring electric utility comparison group. This group of companies provides a reasonable proxy group for comparison to a regulated utility of the size and scope of the Service Company and KAWC. During 2024, the cost of customer accounts services for KAWC customers was $25.03 compared to the projected 2024 average of $28.09 for neighboring electric utilities. Fifteen of the comparison group's 27 utilities had a higher cost than KAWC.

Concerning question 5, the following conclusions were drawn:

- The services that the Service Company provides are necessary and are required for water and wastewater utilities.

- Furthermore, there is no redundancy or overlap in the services provided by the Service Company to KAWC. For all the services provided there was only one entity primarily responsible for the service.

Concerning question 6, the following conclusion was drawn:

- The control actvities applied to Service Company service provided to KAWC and the associated charges are the type that help ensure both services and chrages are ncessary and reasonable.

SECTION 2:
BACKGROUND

Overview of American Water Works Service Company

American Water Works Service Company, Inc. ("AWWSC" or the "Service Company") exists to provide certain shared services to American Water Works Company, Inc.'s ("American Water") subsidiaries. AWWSC follows a service company model used by many utility holding companies that own multiple regulated utilities. By consolidating executive and professional services into a single service company, utility holding companies are able to realize the following benefits for customers:

- Purchasing Economies – Common expenses (e.g., insurance, chemicals, piping) can be procured on a much larger scale, thereby providing greater bargaining power for the combined entity compared to individual utility operating companies. A service company facilitates enterprise-wide purchasing programs through its procurement and contract administration functions.
- Operating Economies of Scale – A service company is able to deliver services more efficiently because workloads can be balanced across more persons and facilities. For instance, AWWSC is able to maintain one principal water testing laboratory for the entire organization. This is much more cost-efficient than each operating utility funding its own testing arrangements.
- Continuity of Service – Centralizing service company personnel who perform similar services facilitates job cross-training and sharing of knowledge and expertise. This makes it easier to manage staff turnover and absences and to sustain high levels of service to operating utilities. An individual operating utility might experience considerable disruption if a key professional left and it were necessary to hire outside to fill the vacancy.
- Maintenance of Enterprise-Wide Standards – Personnel in AWWSC establish standards for many functions (e.g., engineering designs, operating procedures and maintenance practices). It is easier to align operating utility operations because their implementation is supported by the Service Company.
- Improved Support and Guidance – AWWSC provides another dimension of management and financial support and guidance that supplements local operating utility management. The Service Company facilitates standard planning and reporting, which helps ensure that operating utilities meet the requirements of their customers in a cost-effective manner.
- Retention of Personnel – A service company organization provides operating utility personnel with another career path beyond what may be available on a local level. These opportunities tend to improve employee retention.

American Water follows the model for other utility service companies in another important regard: its services are provided to affiliate operating utilities, like KAWC, at cost. AWWSC is not a profit-making entity. The Service Company assigns only its actual expenses to the American Water subsidiaries to which it provides services.

The Service Company provides services to American Water operating companies from the following locations:

- One Water Street – Service Company employees at One Water Street provide corporate governance and service functions, including executive management, finance, accounting, audit, tax, regulatory, external affairs, engineering, supply chain, legal, human resources and benefits services. One Water Street also includes American Water's main Information Technology ("IT") Services center for employees, provides software delivery and enhancements and provides local on-site support as well as the IT Service Desk for remote assistance for all employees using personal computers in the performance of their day-to-day activities. Further, One Water Street supports mission-critical systems such as supervisory control and data acquisition ("SCADA") as well as emerging technologies such as geographic information systems and mobility. It provides technical expertise in project governance and release management while ensuring compliance with all governmental regulations.
- Central Lab – The national trace substance laboratory is located in Belleville, Illinois, and performs testing for American Water operating utilities, including KAWC.
- Customer Relations and Customer Service– The Customer Service Organization ("CSO") provides customer relations, field resource coordination services, customer communication, and billing and collection services from various locations.
- Information Technology ("IT") Services Center – The IT Services Center supports the technology infrastructure required to run business applications and communications systems for American Water's operating companies.
- Regional Support Services – Operating companies are provided with certain support services that are delivered more effectively on a regional basis because individual operating company workloads are not sufficient to warrant maintaining their own full-time staff for these activities. These services require closer proximity to operating companies and therefore are located closer to the operating companies the employees provide service.

Service Company Accounting

Service Company maintains an accounting ledger for recording transactions (e.g., labor, expenses, overhead, capital and other assets, liabilities and equity) in a Service Company ledger separate from affiliates' ledgers. Monthly financial statements are prepared that summarize month-to-date and

year-to-date costs, budgets and prior year, with variances and explanations, by category and function. Accounting categories by transaction type are described below:

- Service Company Labor: The Service Company utilizes a system that tracks time and attendance. Employees electronically enter hours worked (including vacation, sick, family leave, etc.) and accounting information (e.g., business unit; formula; pay type) and electronically submit the timesheet for approval. Submitted timesheets are electronically routed to authorized approvers. Time sheets generally require approval (of hours and accounting information such as formulas, etc.) by an authorized timesheet approver in the employee's home business unit.
- Service Company Expenses: Expenditures (i.e., standard invoices, purchase orders, electronic disbursements, miscellaneous invoices, recurring invoices, recurring vouchers, and procurement cards) and journal entries require a preparer to enter accounting coding details (e.g., cost center, cost element and Work Breakdown Structure (WBS)) and a reviewer to approve the information in accordance with the Delegation of Authority Policy. Expenditures are processed electronically and are automatically routed to the employee's supervisor for approval. Costs are posted many times daily, in detail, in the business unit selected. Journal entries are submitted as prepared to the appropriate reviewer and posted as approved.
- Service Company Assets: Service Company assets are procured directly by Service Company or through a capital leasing arrangement with Laurel Oak Properties (LOP). Service Company capitalizes these LOP leases as Non-Utility Plant assets in accordance with generally accepted accounting principles. Generally speaking, Service Company assets (including hardware, servers, laptops, desktops, servers, storage racks, furniture, laboratory and test equipment, security cameras, monitors and leasehold improvements) are acquired by Service Company or through LOP via a capital lease. Service Company or LOP, on behalf of the Service Company, will acquire the necessary materials and services to build the assets that are needed for the Service Company to meet its business needs. One Water Street (OWS), which owns the Camden headquarters, is providing furniture, fixtures and office-related equipment for the first 7 years of the lease with the Service Company.
- Service Company Overhead: Costs for support personnel (e.g., administrative assistants, mailroom clerks), rents, facility expenses, pension, medical insurance, taxes, general office supplies and other similar expenses are recorded in the ledger of the cost center responsible for incurring the charge. Overhead expenditures are posted using the labor and expense processes noted above, and are recorded, in detail, in the ledger of the cost center responsible for the charge, using an overhead WBS.

Service Company Billing and Clearing

Service Company has developed a billing system that charges directly or allocates costs for services provided to Affiliates. Service Company billing is processed monthly and includes all Service Company costs charged to Affiliates using the WBS element selected for each transaction.

- WBS element: Every Service Company transaction (vouchers, journal entries, payroll batch, etc.) requires a WBS element within the account coding string. Each WBS element is configured in SAP with the following: Affiliate(s) to be charged, percent of charge to be billed to each Affiliate (total must equal 100%), receiving object (e.g., Affiliate's cost center) for O&M costs or an Affiliate's WBS element for capital expenditures (CAPEX). WBS elements are configured in SAP with an end date (month/year) to prevent transactions from using an expired WBS during data input.
- Affiliate Billing Process: Service Company billing is a two-step process that first calculates allocations of transactions for all non-overhead WBS elements. The second step calculates overhead transaction allocations using the ratio of direct labor (Cost Element 5012000) allocations to Affiliates from the first step above multiplied by the pool of overhead expenses by physical location.
- Bill Clearing Process: Service Company billings are cleared through American Water Capital Corp., (an affiliate) monthly via an intercompany journal entry to GL Account 23120000 (Notes Payable – Associated Companies) posted on the last day of the month. Payments are estimated for each Affiliate using the prior month actual billing (current month estimate) with adjustment for prior month actual to estimate (previous month funding) true-up.

SECTION 3:

SERVICE COMPANY COST COMPARISION APPROACH

Service Company 2024 Charges

During 2024, the Service Company billed KAWC a total of approximately $15.66 million, as shown in the table below. These charges were subjected to a market-to-cost comparison.

Table 1: Service Company 2024 Charges

	2024
Support Services - O&M	$13,297,804
Support Services - Capital	2,362,377
Total Service Company Charges	$15,660,182

For purposes of comparing these charges to certain outside benchmarks, Service Company services were placed into three categories:

- Managerial and Professional Services – Includes such services as management, accounting, legal, human resources, engineering and information technology.
- Customer Account Services – Includes customer-related services, such as call handling, credit, billing, collection and payment processing.
- Field Resource Coordination Services – Includes tracking and dispatching service orders for field representatives and distribution crews to carry out.

Total 2024 Service Company dollar and hour charges break down between management and professional services and customer account services are as follows:

Table 2: Service Company 2024 Charges and Hours

	2024	
	Charges	Hours
Management and Professional Services	$12,994,594	56,067
Customer Account Services	2,282,918	25,503
Field Resource Coordination Services	382,670	7,237
Total Service Company Charges	$15,660,182	88,807

Service Company Cost Comparison Approach

This study's first question—whether the Service Company 2024 charges are reasonable—was determined by comparing KAWC's A&G-related Service Company charges per regulated retail customer to the same charges for utility companies that must file the FERC Form 60 – Annual Report of Service Companies.

The second question—whether KAWC's 2023 total Customer Accounts/A&G expenses and total O&M expenses are reasonable—was determined by comparing KAWC's costs to those of a comparison group of Kentucky water companies that are regulated by the Kentucky Public Service Commission ("KPSC"). Comparison group data was obtained from the 2023 annual reports filed with the KPSC. At the time this report was prepared, water companies operating in Kentucky had not filed their 2024 Annual Reports with the KPSC.

The third question—whether the Service Company charges during 2024 were at the lower of cost or market—was evaluated by comparing the cost per hour for managerial and professional services provided by Service Company personnel to hourly billing rates that would be charged by outside providers of equivalent services. Service Company costs per hour were based on actual charges to KAWC during 2024. Outside providers' billing rates came from surveys or other information from professionals who could perform the services now provided by the Service Company in 2024.

The fourth question—whether Service Company's 2024 customer account services charges were comparable to other utilities—was addressed by comparing KAWC's customer account services expenses to those of neighboring investor-owned electric utilities. This utility comparison group was selected because the cost of outside providers of customer account services is proprietary and not publicly available. Comparison to electric utilities is appropriate because all utilities, regardless of service type, must perform customer account services activities, including updating customer records for meter reads, printing and mailing bills, and collecting and processing customer payments. Electric utility costs are available from the FERC Form 1; thus, there is appropriate data transparency. The selection of electric utilities from Kentucky and neighboring states provides a sufficiently sized comparison group. At the time of preparing this report FERC Form 1 for 2024 had not been filed by electric utilities, consequently KAWC's customer account expense was compared with the 2023 FERC Form 1 data for electric utilities.

The fifth question—the necessity of Service Company services—was investigated by defining the services provided to KAWC and determining if these services would be required if KAWC were not part of the American Water organization.

The sixth question - the appropriateness of governance - was evaluated by determining if they are in line with control activities envisioned by the Committee of Sponsoring Organizations' (COSO) Internal Control Integrated Framework. Here too, Concentric reviewed and evaluated the Company's compliance with control activities envisioned by COSO.

SECTION 4:

QUESTION 1 – REASONABLENESS OF SERVICE COMPANY CHARGES

Methodology

Utility service companies deliver a variety of services. Some may support their regulated utility affiliate's operations-related functions (e.g., transmission, distribution). All utility service companies, however, provide A&G services to their affiliates. This is the case because considerable economies of scale derive from centralizing the management of corporate A&G services such as finance, human resources and information technology. Because A&G-related services are delivered by all utility service companies, this study uses A&G charges per customer as the metric by which to test the reasonableness of affiliate charges.

KAWC's Service Company A&G Cost per Customer

During 2024, KAWC was charged $84 per customer by the Service Company for A&G-related services. The calculation of this amount, shown in the table below, starts with total Service Company charges and adjusts for capital and non-A&G function (e.g., engineering, operations and water quality) charges. These adjustments are necessary to develop a per-customer cost that can be compared to the cost of the utility service company comparison group.

Table 3: Service Company A&G Cost per Customer

	2024
Total Service Company Charges	$15,660,182
Less: Capital Charges	(2,362,377)
Less: Non-A&G Charges	
Engineering	(104,381)
Operations	(1,235,233)
Water Quality	(98,168)
A&G Service Company Charges	$11,860,023
KAWC Customer Count	140,897
A&G SC Charges per Customer	$84

Comparison Group Cost Per Customer

Every centralized service company in a holding company system subject to regulation by the FERC must file a Form 60 in accordance with the Public Utility Holding Company Act of 2005, Section 1270, Section 390 of the Federal Power Act, and 18 Code of Federal Regulations paragraph 366.23. The Form 60 is designed to collect financial information from service companies within a holding company structure.

Charges to utility affiliates for the comparison group service companies were obtained from Schedule XVI – Analysis of Charges for Service Associate and Non-Associate Companies (p. 303 to 306) of each entity's FERC Form 60. Information from Form 60 schedule Account 457 – Analysis of Billing – Associate Companies was also used to isolate and eliminate charges to non-regulated affiliates from the cost pool used to calculate A&G expenses per regulated service customer.

For 2023, a Form 60 was filed by service companies associated with 22 utility holding companies. These service companies support utilities that provide regulated electric and, in some cases, gas service to retail customers.

FERC Form 60 shows service company charges to affiliates by FERC account. Table 4 below shows a list of FERC A&G accounts and designates which correspond to services the Service Company provides to KAWC. Amounts in the designated FERC accounts are included in the calculation of service company A&G expenses per regulated customer.

Table 4: FERC A&G Accounts Included in the Cost Calculation

FERC Account	Included In Cost Calculation
901 - Supervision	Yes
902 - Meter reading expenses	
903 - Customer records and collection expenses	Yes
904 - Uncollectible accounts	
905 - Miscellaneous customer accounts expenses	Yes
907 - Supervision	
908 - Customer assistance expenses	
909 - Informational And Instructional Advertising Expenses	
910 - Miscellaneous Customer Service And Informational Exp	Yes
911 - Supervision	
912 - Demonstrating and Selling Expenses	
913 - Advertising Expenses	
916 - Miscellaneous Sales Expenses	
920 - Administrative and General Salaries	Yes
921 - Office Supplies and Expenses	Yes
923 - Outside Services Employed	Yes
924 - Property Insurance	Yes
925 - Injuries and Damages	
926 - Employee Pensions and Benefits	Yes
928 - Regulatory Commission Expenses	
930.1 - General Advertising Expenses	
930.2 - Miscellaneous General Expenses	Yes
931 - Rents	Yes
935 - Maintenance of Structures and Equipment	Yes

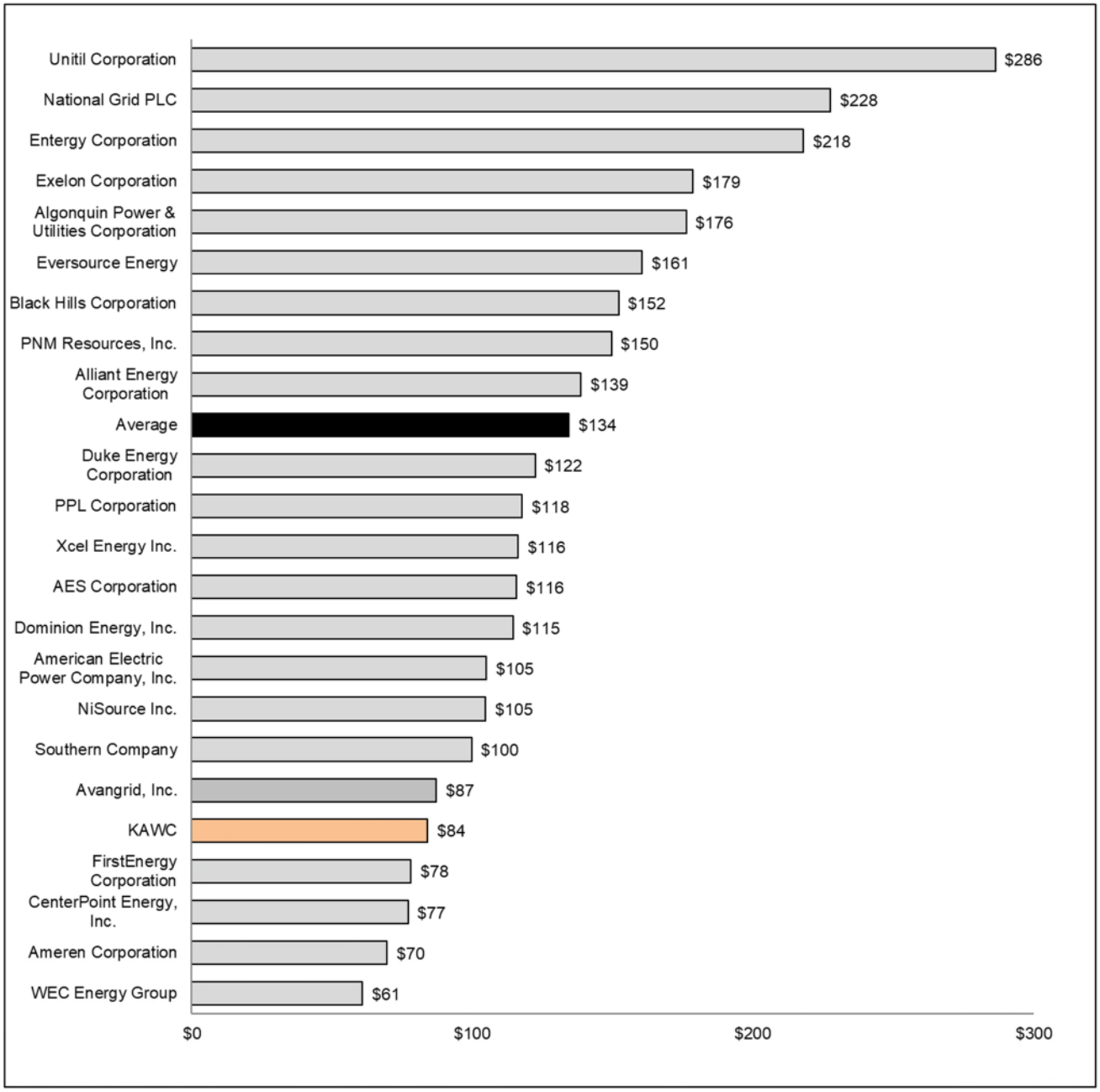
The A&G expenses per regulated utility customer for the 22 utility companies whose service companies filed a Form 60 for 2023 are calculated in Table 5.

Table 6 shows KAWC's 2024 Service Company cost per customer of $84 to be lower than the average of $134 per customer for the comparison group service companies. Eighteen of the 22 comparison group service companies had higher per-customer A&G costs than KAWC's charges from the Service Company. Based on this result, it is possible to conclude that the Service Company's charges to KAWC were reasonable.

Table 5: Calculation of 2023 Service Company A&G Expense per Customer

Utility Company	2023 Regulated Retail Service Company A&G Expenses	Regulated Retail Customers	Cost per Customer
American Electric Power Company, Inc.	$588,263,556	5,600,000	$105
AES Corporation	$123,075,874	1,062,523	$116
Algonquin Power & Utilities Corporation	$221,322,034	1,256,000	$176
Alliant Energy Corporation	$197,619,921	1,425,000	$139
Ameren Corporation	$229,559,690	3,300,000	$70
Avangrid, Inc.	$287,844,513	3,300,000	$87
Black Hills Corporation	$203,724,358	1,338,000	$152
CenterPoint Energy, Inc.	$540,109,807	7,000,000	$77
Dominion Energy, Inc.	$469,623,707	4,100,000	$115
Duke Energy Corporation	$1,236,636,185	10,100,000	$122
Entergy Corporation	$654,206,010	3,000,000	$218
Eversource Energy	$706,645,788	4,400,000	$161
Exelon Corporation	$1,876,051,402	10,500,000	$179
FirstEnergy Corporation	$468,575,688	6,000,000	$78
National Grid PLC	$1,570,837,001	6,900,000	$228
NiSource Inc.	$398,247,930	3,800,000	$105
PNM Resources, Inc.	$123,352,833	824,000	$150
PPL Corporation	$412,516,675	3,500,000	$118
Southern Company	$898,124,244	9,000,000	$100
Unitil Corporation	$56,255,536	196,400	$286
WEC Energy Group	$285,711,643	4,700,000	$61
Xcel Energy Inc.	$698,181,037	6,000,000	$116
Average			$134

Table 6: Comparison of Service Company A&G Charges per Customer



SECTION 5:

QUESTION 2 – REASONABLENESS OF TOTAL EXPENSES

Methodology

This study benchmarked KAWC's total expenses, which include charges from the Service Company and expenses incurred directly by KAWC. This comparison presents a broader view of KAWC's expenses beyond Service Company charges.

The comparison group of Kentucky water companies was selected based on the following criteria:

- The water company filed an annual report for 2023 with the KPSC. At the time this report was been prepared, water companies operating in Kentucky had not filed their 2024 Annual Reports with the KPSC.
- The water company has 6,000 or more customers

Based on these criteria, the 26 water companies listed in the table below were selected for inclusion in the comparison group. A number of these companies purchase their entire water supply. Thus, the comparison group contains a combination of integrated and distribution-only water companies.

Table 7: List of Water Companies in Comparison Group

		Source of Water Supply Percent		
Comparison Group Companies (2023)	Customers	Produced	Purchased	Total
Northern Kentucky Water District	87,111	100.0%	0.0%	100%
Warren County Water District	33,873	0.0%	100.0%	100%
Hardin County Water District 2	30,459	89.0%	11.0%	100%
Boone County Water District	29,221	0.0%	100.0%	100%
Mountain Water District	16,495	55.7%	44.3%	100%
Daviess County Water District	13,741	0.0%	100.0%	100%
Madison County Utilities District	11,883	0.0%	100.0%	100%
Edmonson County Water District	11,468	99.7%	0.3%	100%
Hardin County Water District 1	11,327	76.9%	23.1%	100%
Western Pulaski County Water District	9,399	0.0%	100.0%	100%
Oldham County Water District	9,172	100.0%	0.0%	100%
Columbia/Adair Utilities District	8,540	94.9%	5.1%	100%
Green River Valley Water District	8,520	100.0%	0.0%	100%
Grayson County Water District	7,970	56.7%	43.3%	100%
Bullock Pen Water District	7,682	27.5%	72.5%	100%
Rowan Water Inc.	7,546	0.0%	100.0%	100%
Henderson County Water District	6,473	0.0%	100.0%	100%
Barkely Lake Water District	6,409	100.0%	0.0%	100%
Marion County Water District	6,404	0.0%	100.0%	100%
Laurel County Water District 2	6,324	100.0%	0.0%	100%
McCreary County Water District	6,285	100.0%	0.0%	100%
Allen County Water District	6,264	0.0%	100.0%	100%
Harrison County Water Association Inc.	6,255	0.0%	100.0%	100%
Garrard County Water Association Inc.	6,201	0.0%	100.0%	100%
Ohio County Water District	6,125	100.0%	0.0%	100%
Muhlenberg County Water District	6,008	0.0%	100.0%	100%
Kentucky-American Water Company	138,439	99%	1%	100%

Information necessary to perform the cost comparison was obtained from the 2023 annual reports to the KPSC. The following metrics were developed for comparison:

- Customer Accounts and A&G Expenses per customer
- Total O&M Expenses (including Operations, Maintenance, Customer Accounts and A&G Expenses) per customer.

The calculation of costs per customer is shown in Table 8. A set of calculations are presented for all comparison group companies and a different set of calculations for those that do not purchase 100% of their water supply.

Table 8: Calculation of Costs per Customer

All Comparison Group Water Companies

	Cost per Customer (All Companies)				
	Cust Accts & A&G Exp	Total Utility Exp	Total Customers	Cost Per Customer CA & A&G Exp	Cost Per Customer Total Util Exp
Kentucky-American Water Company (2023)	$21,095,345	$43,280,558	138,439	**$152**	**$313**
Comparison Group (2023)					
Boone County Water District	$1,280,116	$16,395,742	29,221	$44	$561
Bullock Pen Water District	741,401	3,791,285	7,682	97	494
Daviess County Water District	842,623	5,621,553	13,741	61	409
Edmonson County Water District	874,482	3,075,367	11,468	76	268
Garrard County Water Association Inc.	504,775	1,891,739	6,201	81	305
Grayson County Water District	1,136,456	3,280,195	7,970	143	412
Green River Valley Water District	1,393,384	4,313,515	8,520	164	506
Hardin County Water District 1	1,856,243	7,367,809	11,327	164	650
Hardin County Water District 2	3,438,868	12,136,827	30,459	113	398
Harrison County Water Association Inc.	870,530	3,148,809	6,255	139	503
Henderson County Water District	519,344	2,873,358	6,473	80	444
Laurel County Water District 2	922,766	2,109,444	6,324	146	334
Marion County Water District	675,424	3,343,723	6,404	105	522
McCreary County Water District	1,220,932	3,391,776	6,285	194	540
Mountain Water District	2,833,459	8,426,102	16,495	172	511
Muhlenberg County Water District	1,439,208	3,908,618	6,008	240	651
Northern Kentucky Water District	10,267,210	35,793,113	87,111	118	411
Ohio County Water District	697,869	3,346,703	6,125	114	546
Oldham County Water District	1,956,403	4,628,003	9,172	213	505
Rowan Water Inc.	648,372	3,189,774	7,546	86	423
Warren County Water District	2,462,632	13,155,449	33,873	73	388
Western Pulaski County Water District	1,003,527	3,238,060	9,399	107	345
Allen County Water District	698,383	2,362,609	6,264	111	377
Barkely Lake Water District	802,025	2,284,605	6,409	125	356
Columbia/Adair Utilities District	1,163,705	2,907,471	8,540	136	340
Madison County Utilities District	1,756,965	4,914,302	11,883	148	414
Comparison Group Average				**$125**	**$447**

Excluding Water Companies with 100% Purchased Water

	Cost per Customer (excluding 100% Purchased Water)				
	Cust Accts & A&G Exp	Total Utility Exp	Total Customers	Cost Per Customer CA & A&G Exp	Cost Per Customer Total Util Exp
Kentucky-American Water Company (2023)	$21,095,345	$43,280,558	138,439	**$152**	**$313**
Comparison Group (2023)					
Bullock Pen Water District	$741,401	$3,791,285	$7,682	$97	$494
Edmonson County Water District	874,482	3,075,367	11,468	76	268
Grayson County Water District	1,136,456	3,280,195	7,970	143	412
Green River Valley Water District	1,393,384	4,313,515	8,520	164	506
Hardin County Water District 1	1,856,243	7,367,809	11,327	164	650
Hardin County Water District 2	3,438,868	12,136,827	30,459	113	398
Laurel County Water District 2	922,766	2,109,444	6,324	146	334
McCreary County Water District	1,220,932	3,391,776	6,285	194	540
Mountain Water District	2,833,459	8,426,102	16,495	172	511
Northern Kentucky Water District	10,267,210	35,793,113	87,111	118	411
Ohio County Water District	697,869	3,346,703	6,125	114	546
Oldham County Water District	1,956,403	4,628,003	9,172	213	505
Barkely Lake Water District	802,025	2,284,605	6,409	125	356
Columbia/Adair Utilities District	1,163,705	2,907,471	8,540	136	340
Comparison Group Average				**$141**	**$448**

Source: 2023 Annual Reports to the Kentucky Public Service Commission

The table below shows the positions of KAWC's 2023 expenses per customer against all comparison group companies' 2023 expenses.

Table 9: A&G and O&M Expense per Customer for All Companies in the Comparison Group

All Comparison Group Companies

Customer Accounts and A&G Expenses

Company	Cost/Customer
Muhlenberg County Water District	$240
Oldham County Water District	$213
McCreary County Water District	$194
Mountain Water District	$172
Hardin County Water District 1	$164
Green River Valley Water District	$164
Kentucky-American Water Company	**$152**
Madison County Utilities District	$148
Laurel County Water District 2	$146
Grayson County Water District	$143
Harrison County Water Association Inc.	$139
Columbia/Adair Utilities District	$136
Barkely Lake Water District	$125
Comparison Group Average	**$125**
Northern Kentucky Water District	$118
Ohio County Water District	$114
Hardin County Water District 2	$113
Allen County Water District	$111
Western Pulaski County Water District	$107
Marion County Water District	$105
Bullock Pen Water District	$97
Rowan Water Inc.	$86
Garrard County Water Association Inc.	$81
Henderson County Water District	$80
Edmonson County Water District	$76
Warren County Water District	$73
Daviess County Water District	$61
Boone County Water District	$44

Total O&M Expenses

Company	Cost/Customer
Muhlenberg County Water District	$651
Hardin County Water District 1	$650
Boone County Water District	$561
Ohio County Water District	$546
McCreary County Water District	$540
Marion County Water District	$522
Mountain Water District	$511
Green River Valley Water District	$506
Oldham County Water District	$505
Harrison County Water Association Inc.	$503
Bullock Pen Water District	$494
Comparison Group Average	**$447**
Henderson County Water District	$444
Rowan Water Inc.	$423
Madison County Utilities District	$414
Grayson County Water District	$412
Northern Kentucky Water District	$411
Daviess County Water District	$409
Hardin County Water District 2	$398
Warren County Water District	$388
Allen County Water District	$377
Barkely Lake Water District	$356
Western Pulaski County Water District	$345
Columbia/Adair Utilities District	$340
Laurel County Water District 2	$334
Kentucky-American Water Company	**$313**
Garrard County Water Association Inc.	$305
Edmonson County Water District	$268

Source: 2023 Annual Reports to the Kentucky Public Service Commission; Company information

When water companies that purchase 100% of their water supply are excluded from the comparison, KAWC's customer accounts and A&G expense per customer are above average, with 5 other water companies having higher costs per customer. KAWC's total O&M expenses per customer are lower than all but 1 comparison group water company.

Table 10: A&G and O&M Expense per Customer Excluding Companies with 100% Purchased Water

Excluding Companies with 100% Purchased Water

Customer Accounts and A&G Expenses

Company	Cost/Customer
Oldham County Water District	$213
McCreary County Water District	$194
Mountain Water District	$172
Hardin County Water District 1	$164
Green River Valley Water District	$164
Kentucky-American Water Company	**$152**
Laurel County Water District 2	$146
Grayson County Water District	$143
Comparison Group Average	**$141**
Columbia/Adair Utilities District	$136
Barkely Lake Water District	$125
Northern Kentucky Water District	$118
Ohio County Water District	$114
Hardin County Water District 2	$113
Bullock Pen Water District	$97
Edmonson County Water District	$76

Total O&M Expenses

Company	Cost/Customer
Hardin County Water District 1	$650
Ohio County Water District	$546
McCreary County Water District	$540
Mountain Water District	$511
Green River Valley Water District	$506
Oldham County Water District	$505
Bullock Pen Water District	$494
Comparison Group Average	**$448**
Grayson County Water District	$412
Northern Kentucky Water District	$411
Hardin County Water District 2	$398
Barkely Lake Water District	$356
Columbia/Adair Utilities District	$340
Laurel County Water District 2	$334
Kentucky-American Water Company	**$313**
Edmonson County Water District	$268

Source: 2023 Annual Reports to the Kentucky Public Service Commission; Company information

Total O&M expenses per customer reflect all costs to operate a utility and deliver service to its customers. KAWC achieves lower O&M expenses thanks to the services it receives from the Service Company. Examples of just a few of these economically beneficial services include the following:

- Supply Chain - increased purchasing power results in lower costs for materials, supplies and outside services
- Customer Service – centralized services delivered by shared resources enable greater economies of scale and enhanced service levels
- Field Resource Coordination Services - enable KAWC to focus its resources more efficiently and effectively
- Belleville Lab – central lab testing services are delivered at cost by qualified analysts
- Accounting – work is performed by shared resources, without the need for KAWC to retain full-time staff
- Human Resources – economies of scale are achieved through centralized payroll and benefits administration

Based upon the cost comparisons presented in this chapter, it can be concluded that KAWC's total O&M expenses are reasonable.

SECTION 6:

QUESTION 3 – PROVISION OF SERVICES AT LOWER OF COST OR MARKET

Methodology

The value of services comparison is accomplished by comparing the cost per hour for Service Company managerial and professional services to those of outside service providers to whom these duties could be assigned. Based on the nature of the Service Company services, it was determined that the following outside providers could perform the categories of services indicated below:

- Management Consultants – executive and administrative management, risk management, human resources and communications services
- Attorneys – legal services
- Certified Public Accountants – accounting, financial and rates and revenues services
- IT Professionals – information technology services
- Professional Engineers – engineering, operations and water quality services.

Service Company's hourly rates were calculated for each of the five outside service provider categories, based on the dollars and hours charged to KAWC during 2024. Hourly billing rates for outside service providers were developed using third party surveys or directly from information furnished by outside providers themselves.

It should be noted that by using the Service Company's hours charged to KAWC during 2024, its hourly rates are actually overstated because all exempt Service Company personnel charge a maximum of 8 hours per day even when they work more. Outside service providers generally bill for every hour worked. If all overtime hours of Service Company personnel had been factored into the hourly rate calculation, Service Company hourly rates would have been lower.

The last step in the lower-of-cost-or-market comparison was to compare the Service Company's average cost per hour to the average cost per hour for outside providers.

Service Company Hourly Rates

Table 12 details the assignment of 2024 management and professional Service Company charges by outsider provider category. Table 13 shows the same assignment for Service Company management and professional hours charged to KAWC during 2024.

Adjustments to these dollar amounts were necessary to calculate Service Company hourly rates that are directly comparable to those of outside providers. Adjustments were made to the following non-labor Service Company charges for 2024:

- Contract Services – 2024 Service Company charges to KAWC include expenses associated with the use of outside professional firms to perform certain enterprise-wide services (e.g., legal, financial audit, actuarial services). These professional fees are excluded from the Service Company hourly rate calculation because the related services have effectively been out-sourced already.
- IT Infrastructure Expenses – Included in 2024 Service Company charges to KAWC are leases, maintenance fees and depreciation related to American Water's enterprise computing and network infrastructure and business applications. An outside provider that takes over operation of this infrastructure would recover these expenses over and above the cost of personnel necessary to operate the data center.
- Non-Service-Related Expenses – These are corporate expenses such current and deferred income tax expense, line of credit fees and board expenses. These are not related to the provision of services by Service Company personnel and have been excluded.
- Travel Expenses – In general, client-related travel expenses incurred by outside service providers are not recovered through their hourly billing rates. Rather, actual out-of-pocket travel expenses are billed to clients in addition to fees for professional services. Thus, it is appropriate to remove these Service Company charges from the hourly rate calculation.

Table 11 shows how contract services, travel expenses, IT infrastructure and non-service-related Service Company charges are assigned to the five outside provider categories.

Based on the assignment of expenses and hours shown in Tables 12 and 13 respectively, and the excludable items shown in Table 14, the Service Company's equivalent costs per hour for 2024 are calculated below in Table 11.

Table 11: 2024 Hourly Rates by Category of Service

	2024					
	Attorney	Management Consultant	Certified Public Accountant	IT Professional	Professional Engineer	Total
Total management, professional & technical services charges	$788,563	$5,455,738	$2,437,460	$3,802,966	$509,867	$12,994,594
Less: Exclusions						
Contract services	49,752	233,907	225,071	968,035	61,184	1,537,949
IT infrastructure expenses	-	161,253	15	1,068,082	23	1,229,374
Non-service related expenses	57,791	123,474	(15,538)	27,847	51,631	245,205
Travel expenses	4,255	41,114	41,887	25,205	47,871	160,333
Total Exclusions	111,798	559,749	251,435	2,089,169	160,710	3,172,861
Net Service-Related Charges (A)	$676,766	$4,895,989	$2,186,024	$1,713,797	$349,157	$9,821,733
Total Hours (B)	2,567	17,794	19,431	13,300	2,976	56,067
Average Hourly Rate (A / B)	**$264**	**$275**	**$113**	**$129**	**$117**	

Table 12: 2024 Service Company Charges by Location and Function

Location	Function	12 Months Ended December 31, 2024 Service Company Charges					
		Attorney	Management Consultant	Certified Public	IT Professional	Professional Engineer	Total
Belleville Lab	Water Quality	$0	$0	$0	$0	$98,168	$98,168
Customer Service	Human Resources	-	75	-	-	-	75
Corporate	Accounting	-	-	1,064,286	-	-	1,064,286
	Administration	-	2,501,270	-	-	-	2,501,270
	Audit	-	-	165,095	-	-	165,095
	Business Development	-	213,610	-	-	-	213,610
	Communications	-	344,345	-	-	-	344,345
	Engineering	-	-	-	-	407,828	407,828
	External Affairs	-	1,367	-	-	-	1,367
	Finance	-	89,852	537,470	-	-	627,322
	Human Resources	-	975,112	-	-	-	975,112
	Information Technology	-	-	-	70,799	-	70,799
	Legal	459,725	-	-	-	-	459,725
	Operations	-	960,336	-	-	-	960,336
	Supply Chain	-	-	305,636	-	-	305,636
Regional Offices	Administration	-	334,857	-	-	-	334,857
	Business Development	-	1,012	-	-	-	1,012
	Engineering	-	-	-	-	3,871	3,871
	External Affairs	-	2,447	-	-	-	2,447
	Finance	-	-	363,576	-	-	363,576
	Human Resources	-	462	-	-	-	462
	Legal	328,838	-	-	-	-	328,838
	Operations	-	30,993	-	-	-	30,993
	Rates & Regulatory	-	-	1,397	-	-	1,397
Information Technology	Information Technology	-	-	-	3,467,609	-	3,467,609
	Operations	-	-	-	264,558	-	264,558
Total Dollars Charged		**$788,563**	**$5,455,738**	**$2,437,460**	**$3,802,966**	**$509,867**	**$12,994,594**

Table 13: 2024 Service Company Hours by Location and Function

Location	Function	2024 Service Company Hours					
		Attorney	Management Consultant	Certified Public	IT Professional	Professional Engineer	Total
Belleville Lab	Water Quality	-	-	-	-	697	697
Customer Service	Human Resources						
Corporate	Accounting	-	-	9,081	-	-	9,081
	Administration	-	2,412	-	-	-	2,412
	Audit	-	-	766	-	-	766
	Business Development	-	1,424	-	-	-	1,424
	Communications	-	1,229	-	-	-	1,229
	Engineering	-	-	-	-	2,278	2,278
	External Affairs	-	-	-	-	-	-
	Finance	-	189	3,846	-	-	4,035
	Human Resources	-	6,182	-	-	-	6,182
	Information Technology	-	-	-	640	-	640
	Legal	1,183	-	-	-	-	1,183
	Operations	-	4,816	-	-	-	4,816
	Supply Chain	-	-	2,860	-	-	2,860
Regional Offices	Administration	-	1,359	-	-	-	1,359
	Business Development	-	-	-	-	-	-
	Engineering	-	-	-	-	-	-
	External Affairs	-	-	-	-	-	-
	Finance	-	-	2,878	-	-	2,878
	Human Resources	-	-	-	-	-	-
	Legal	1,384	-	-	-	-	1,384
	Operations	-	184	-	-	-	184
	Rates & Regulatory	-	-	-	-	-	-
Information Technology	Information Technology	-	-	-	8,909	-	8,909
	Operations	-	-	-	3,750	-	3,750
Total Hours		**2,567**	**17,794**	**19,431**	**13,300**	**2,976**	**56,067**

Table 14: 2024 Service Company Charges Excludable from the Hourly Rate Calculation

Charges By Function	Exclusions From Hourly Rate Calculation					Outside Service Provider Category
	Contract Services	Enterprise IT Expenses	Non-Services-Related Items	Travel Expenses	Total	
Accounting	$74,537	$15	($52,226)	$13,733	$36,060	Certified Public Accountant
Administration	67,871	161,249	115,812	23,051	367,983	Management Consultant
Audit	49,801		7	1,068	50,876	Certified Public Accountant
Business Development	5,004		87	3,173	8,264	Management Consultant
Communications	35,876		3,055	1,831	40,762	Management Consultant
Engineering	8,598	8	3,378	14,754	26,738	Professional Engineer
External Affairs	25		62	1,225	1,311	Management Consultant
Finance	100,590		36,218	21,197	158,005	Certified Public Accountant
Human Resources	125,131	4	4,458	11,836	141,428	Management Consultant
Information Technology	968,035	1,068,082	27,847	25,205	2,089,169	IT Professional
Legal	49,752		57,791	4,255	111,798	Attorney
Operations	54,340	15	15,092	33,007	102,454	Professional Engineer
Rates & Regulatory			1	134	135	Certified Public Accountant
Supply Chain	143		462	5,756	6,360	Certified Public Accountant
Water Quality	(1,754)		33,162	109	31,517	Professional Engineer
Total	**$1,537,949**	**$1,229,374**	**$245,205**	**$160,333**	**$3,172,861**	

Recap By Outside Provider	Exclusions From Hourly Rate Calculation				
	Contract Services	Enterprise IT Expenses	Non-Services-Related Items	Travel Expenses	Total
Attorney	$49,752	$0	$57,791	$4,255	$111,798
Management Consultant	233,907	161,253	123,474	41,114	559,749
Certified Public Accountant	225,071	15	(15,538)	41,887	251,435
IT Professional	968,035	1,068,082	27,847	25,205	2,089,169
Professional Engineer	61,184	23	51,631	47,871	160,710
Total	**$1,537,949**	**$1,229,374**	**$245,205**	**$160,333**	**$3,172,861**

Outside Service Provider Hourly Rates

The next step in the lower-of-cost-or-market comparison was to obtain the average billing rates for outside service providers. The source of this information and the determination of the average rates are described in the paragraphs that follow.

It should be noted that professionals working for three of the five outside provider categories may be licensed to practice by state regulatory bodies. However, not every professional working for these firms is licensed. For instance, among US certified public accounting firms, only more experienced staff are predominantly CPAs (Table 15). Some Service Company employees also have professional licenses. Thus, it is valid to compare the Service Company's hourly rates to those of the outside professional service providers included in this study.

Table 15: Proportion of Licensed CPAs at US Accounting Firms

Position	US Average
Partners/Owners	98%
Directors (11+ years experience)	87%
Managers (6-10 years experience)	79%
Sr Associates (4-5 years experience)	50%
Associates (1-3 years experience)	22%
New Professionals	10%
Source: AICPA's National PCPS/TSCPA Management of an Accounting Practice Survey (2010)	

Attorneys

An estimate of Kentucky attorney rates was developed by Legal trends Report National Law Journal's Survey of Law Firm Economics Report. As shown in Table 16, the 2024 average rate of relevant practice areas is $277.

Table 16: Average Hourly Billing Rates of Lawyers in Kentucky

Average Billing Rates - Kentucky (2024)

Practice Area	Average Hourly Rate (A) Lawyer	Non-Lawyer
Administrative	$246	
Appellate	334	
Bankruptcy	427	
Business	278	
Civil Litigation	313	
Collections	268	
Commercial/Sale of Goods	285	
Construction	257	
Contracts	222	
Corporate	282	
Employment/Labor	279	
Intellectual Property	355	
Mediation/Arbitration	296	
Real Estate	268	
Tax	267	
Average Hourly Rate	$292	$ 177

Lawyer/Non-Lawyer SC Hours	Lawyer	Non-Lawyer	Total
2024 Hours	2,225	342	2,567
Percent of Hours	86.7%	13.3%	100.0%
Weighted Average			
Percent x Hourly Rate	$253	$24	$277

Note A:
https://www.clio.com/resources/legal-trends/compare-lawyer-rates/

Management Consultants

The cost per hour for management consultants was developed from a survey performed by Rodenhauser & Company LLC, a research company that monitors the consulting industry. The survey includes rates that were in effect during 2022 for firms throughout the United States. Consultants typically do not limit their practice to any one region and must travel to a client's location. Thus, the U.S. national average is appropriate for comparison.

The first step in the calculation, presented in Table 13, was to determine an average rate by consultant position level. From these rates, a single weighted average hourly rate was calculated based upon the percentage of time that is typically applied to a consulting assignment by each consultant position level. This calculated rate was escalated to June 30, 2024, the midpoint of 2024.

Table 17: Average Hourly Billing Rates of Management Consultants

Survey billing rates in effect in 2022 (A)

A. Calculation of Average Hourly Billing Rate by Consultant Position

	Average Hourly Rates (Note A)				
	Analyst Consultant	Associate	Sr. Assoc/ Manager	Principal	Partner
Average	$247	$299	$366	$553	$688

B. Calculation of Overall Average Hourly Billing Rate Based on a Typical Distribution of Time on an Engagement

	Entry-Level Consultant	Associate Consultant	Senior Consultant	Junior Partner	Senior Partner	
Average Hourly Billing Rate (from above)	$247	$299	$366	$553	$688	
Percent of Consulting Assignment	30%	30%	25%	10%	5%	Weighted Average
	$74	$90	$91	$55	$34	$345

Escalation to Test Period Midpoint (June 30, 2024)	
CPI at December 31, 2022	296.8
CPI at June 30, 2024	314.2
Inflation/Escalation (B)	5.9%
Average Hourly Billing Rate For Management Consultants At June 30, 2024	$365

Note A: Source is Rodenhauser & Company LLC; Concentric Energy Advisors analysis
Note B: Source is U.S. Bureau of Labor Statistics (https://data.bls.gov/cgi-bin/surveymost)

Certified Public Accountants

The average hourly rate for Kentucky CPAs was developed from a 2023 survey performed by the American Institute of Certified Public Accountants (AICPA). As shown in Table 18, a weighted average hourly rate was developed based on a set of accountant positions and a percentage of time that is typically applied to an accounting assignment, based on expereince. Since the survey includes hourly rates that were in effect as of December 31, 2023, the calculated average rate was escalated to June 30, 2024 which is the midpoint of 2024.

Table 18: Billing Rates of Certified Public Accountants

A. Calculation of Average Hourly Billing Rate by Public Accounting Position
Survey billing rates were those in effect in 2023 (Note A)

	Average Hourly Billing Rate (A)				
	Staff Accountant	Senior Accountant	Manager	Partner	
Average Hourly Billing Rate by CPA Firm Position	$119	$158	$233	$331	
Percent of Accounting Assignment	30%	30%	20%	20%	Weighted Average
	$36	$47	$47	$66	$196

National Average Hourly Billing Rate (above)	$196
Cost of Living Adjustment	
COL Index for Lexington, KY	92.0
Average COL Index	100.0
Adjustment Percentage	92.0%
Cost of Living Adjusted 2023 Hourly Rate	$180
Escalation to 2024 (June 30, 2024)	
CPI at December 31, 2023	306.7
CPI at June 30, 2024	314.2
Inflation/Escalation (C)	2.4%
Average Hourly Billing Rate For CPAs At June 30, 2024	$185

Note A: Source is AICPA's 2023 National PCPS/TSCPA Management of an Accounting Practice Survey
Note B: Source is Cost of Living Index, Source Council for Community and Economic Research
Note C: Source is U.S. Bureau of Labor Statistics (https://data.bls.gov/cgi-bin/surveymost)

Information Technology Professionals

The 2024 average hourly rate for information technology consultants and contractors was developed from two sources: The Service Company for IT contractor rates and a survey performed by Rodenhauser & Company LLC, for IT consultants. As shown in Table 19, that data was compiled and a weighted average was calculated based on a percentage of time that is typically applied to an IT consulting assignment, based on Concentric Energy Advisors' experience. Since the survey includes hourly rates that were in effect as of December 31, 2023, the calculated average rate was escalated to June 30, 2024—the midpoint of 2024.

Table 19: Billing Rates of Information Technology Professionals

A. Calculation of Average Hourly Billing Rate by Information Technology Position
Survey billing rates were those in effect during 2023

	Average Hourly Billing Rate (A)					
	Contractor Positions		Consultant Positions			
	Contractor	Senior Contractor	Associate	Manager	Partner	
Average Hourly Billing Rate by IT Position Category	$107	$150	$289	$373	$442	
Percent of IT Assignment	25%	25%	25%	15%	10%	Weighted Average
	$27	$37	$72	$56	$44	$236
Average Hourly Billing Rate For IT Professionals During 2023						$236
Escalation to Test Period Midpoint (June 30, 2024)						
CPI at December 31, 2022						296.8
CPI at June 30, 2024						314.2
Inflation/Escalation (B)						5.9%
Average Hourly Billing Rate for IT Professionals at June 30, 2024						$250

Note A: Source is American Water Works Service Company, Rodenhauser & Company, LLC, and Concentric Energy Advisors analysis
Note B: Source is U.S. Bureau of Labor Statistics (https://data.bls.gov/cgi-bin/surveymost)

Professional Engineers

American Water provided hourly rate information for outside engineering firms that provided KAWC with their rate schedules. As presented in Table 20, an average rate was developed for each engineering position level. Then, using the Service Company's percentage mix by engineering position, a weighted average cost per hour was calculated.

Table 20: Billing Rates Billing Rates of Professional Engineers

A. Calculation of Average 2024 Hourly Rate by Engineer Position (A)

	Average Hourly Billing Rates			
	Technician	Engineer	Project Manager	Officer
Name of Firm	Senior Technician	Design Engineer Project Engineer	Sr. Mgr. Engineer	Principal Engineer
Firm #1	$156	$173	$257	$356
Firm #2	115	139	201	230
Firm #3	83	101	110	160
Firm #4	130	153	183	200
Firm #5	107	118	229	285
Firm #6	134	135	216	260
Firm #7	128	134	224	270
Firm #8	116	169	269	307
Firm #9	113	141	186	254

B. Calculation of Overall Average Engineering Hourly Billing Rate

	Technician	Engineer	Project Manager	Officer	
	Senior Technician	Design Engineer Project Engineer	Sr. Mgr. Engineer	Principal Engineer	
Average Hourly Billing Rate (From Above)	$120	$140	$208	$258	
Typical Percent of Time on an Engineering Assignment	0%	20%	70%	10%	Weighted Average
	$0	$28	$145	$26	$200

Note A: Source is American Water Service Company information.

Service Company versus Outside Provider Cost Comparison

As shown in the table below, Service Company costs per hour are considerably lower than those of outside providers.

Table 21: 2024 Hourly Rate Difference

	2024 Hourly Rate Differences		
Service Provider	Service Company	Outside Provider	Difference-- Service Co. Greater(Less) Than Outside
Attorney	$264	$277	($13)
Management Consultant	$275	$365	($90)
Certified Public Accountant	$113	$185	($72)
IT Professional	$129	$250	($121)
Professional Engineer	$117	$200	($83)

Based on these cost-per-hour differentials and the number of managerial and professional services hours billed to KAWC during 2024, outside service providers would have cost $4,890,074 more than the Service Company (see table below). Thus, on average, outside providers' hourly rates are approximately 50% higher than those of the Service Company ($4,890,074 /$9,821,733).

Table 22: 2024 Cost Differentials

	2024 Cost Differentials		
Service Provider	Hourly Rate Difference-- Service Co. Greater(Less) Than Outside	Service Company Hours Charged	Dollar Difference
Attorney	($13)	2,567	($33,370)
Management Consultant	($90)	17,794	($1,601,446)
Certified Public Accountant	($72)	19,431	($1,399,022)
IT Professional	($121)	13,300	($1,609,241)
Professional Engineer	($83)	2,976	($246,996)
Service Company Less Than Outside Providers			($4,890,074)

It bears repeating that the cost differential associated with using outside providers is even greater because exempt Service Company personnel do not charge more than 8 hours per day even when they work more. Outside providers generally charge clients for all hours worked. Thus, KAWC would have been charged by outside providers for overtime worked by Service Company personnel who are not paid for that time.

If KAWC were to use outside service providers rather than the Service Company for managerial and professional services, it would incur other additional expenses besides those associated with higher hourly rates. Managing outside firms who would perform approximately 56,067 hours of work (approximately 31 full-time equivalents at 1,800 "billable" hours per FTE per year) would add a significant workload to the existing KAWC management team. Thus, it would be necessary for KAWC to add at least 2 positions to supervise the outside firms and ensure they deliver quality and timely services. The individuals who would fill these positions would need a good understanding of each profession being managed. These persons must also have management experience and the authority necessary to provide credibility with outside firms. As calculated in the table below, the new positions would add $470,670 per year to KAWC's personnel expenses.

Table 23: Cost of Adding Two Professional Positions to KAWC Staff

Cost of Adding Two Professional Positions To KAWC's Staff	Total
New Positions' Salary	$145,000
Benefits (at 47.30%)	68,585
Office Expenses (15%)	21,750
Total Cost per Position	$235,335
Number of Positions Required	2
Total Cost of Added KAWC Staff	$470,670

Thus, the total effect on KAWC customers of contracting all services now provided by Service Company would be an increase in their costs of $5,360,744 ($4,890,074+ $470,670). Based on the results of this comparison, it is possible to conclude that the Service Company charged KAWC at the lower of cost or market for services provided during 2024.

SECTION 7:

QUESTION 4 – REASONABLENESS OF CUSTOMER ACCOUNT SERVICES COSTS

Background

Customer account services involve the processes that occur from the time meter-read data is recorded in the customer information system through the printing and mailing of bills, concluding with the collection and processing of customer payments. Customer account services are accomplished by the following utility functions:

- Customer Call Handling Operations – customer calls/contact, credit, order taking/disposition, bill collection efforts and outage calls
- Customer Call Handling IT – support of phone banks, voice recognition units, call handling software applications and telecommunications
- Customer billing – bill printing, stuffing and mailing
- Remittance processing – processing customer payments received in the mail
- Bill payment centers – processing customer payments at locations where customers can pay their bills in person

Neighboring electric utility cost information comes from the FERC Form 1 that each utility subject to FERC regulation must file. FERC's chart of accounts is defined in Chapter 18, Part 101 of the Code of Federal Regulations. FERC accounts that contain expenses related to customer account services are Account 903 Customer Accounts Expense – Records and Collection Expense and Account 905 Customer Accounts Expense – Miscellaneous Customer Accounts Expense. FERC's definition of the type of expenses that should be recorded in these accounts.

In addition to the charges in these FERC accounts, labor-related overhead charged to the following FERC accounts must be added to the labor components of Accounts 903 and 905:

- Account 926 Employee Pension and Benefits
- Account 408 Taxes Other Than Income (employer's portion of FICA)

Comparison Group

Electric utilities included in the comparison group are shown in the table below. These are companies whose FERC Form 1 reports show amounts for accounts 903 and 905.

Table 24: List of Electric Utilities in the Comparison Group

Utility	State
Ameren Illinois	Illinois
Commonwealth Edison	Illinois
MidAmerican Energy	Illinois
Duke Energy Indiana	Indiana
Indiana Michigan Power	Indiana
Indianapolis Power & Light	Indiana
No. Indiana Public Service	Indiana
So. Indiana Gas and Electric	Indiana
Duke Energy Kentucky	Kentucky
Kentucky Power	Kentucky
Kentucky Utilities	Kentucky
Louisville Gas & Electric	Kentucky
Empire District Electric	Missouri
Evergy Missouri West	Missouri
Union Electric Company	Missouri
Cleveland Electric Illuminating	Ohio
Dayton Power & Light	Ohio
Duke Energy - Ohio	Ohio
Ohio Edison	Ohio
Ohio Power	Ohio
Toledo Edison	Ohio
Kingsport Power	Tennessee
Virginia Electric & Power	Virginia
Appalachian Power	West Virginia
Monongahela Power	West Virginia
Potomac Edison	West Virginia
Wheeling Power	West Virginia

FERC Account Descriptions

903 – Customer Records and Collection Expenses

This account shall include the cost of labor, materials used and expenses incurred in work on customer applications, contracts, orders, credit investigations, billing and accounting, collections and complaints.

Labor

1. Receiving, preparing, recording and handling routine orders for service, disconnections, transfers or meter tests initiated by the customer, excluding the cost of carrying out such orders, which is chargeable to the account appropriate for the work called for by such orders.

2. Investigations of customers' credit and keeping of records pertaining thereto, including records of uncollectible accounts written off.
3. Receiving, refunding or applying customer deposits and maintaining customer deposit, line extension, and other miscellaneous records.
4. Checking consumption shown by meter readers' reports where incidental to preparation of billing data.
5. Preparing address plates and addressing bills and delinquent notices.
6. Preparing billing data.
7. Operating billing and bookkeeping machines.
8. Verifying billing records with contracts or rate schedules.
9. Preparing bills for delivery, and mailing or delivering bills.
10. Collecting revenues, including collection from prepayment meters unless incidental to meter reading operations.
11. Balancing collections, preparing collections for deposit, and preparing cash reports.
12. Posting collections and other credits or charges to customer accounts and extending unpaid balances.
13. Balancing customer accounts and controls.
14. Preparing, mailing, or delivering delinquent notices and preparing reports of delinquent accounts.
15. Final meter reading of delinquent accounts when done by collectors incidental to regular activities.
16. Disconnecting and reconnecting services because of nonpayment of bills.
17. Receiving, recording, and handling of inquiries, complaints, and requests for investigations from customers, including preparation of necessary orders, but excluding the cost of carrying out such orders, which is chargeable to the account appropriate for the work called for by such orders.
18. Statistical and tabulating work on customer accounts and revenues, but not including special analyses for sales department, rate department, or other general purposes, unless incidental to regular customer accounting routines.
19. Preparing and periodically rewriting meter reading sheets.

20. Determining consumption and computing estimated or average consumption when performed by employees other than those engaged in reading meters.

Materials and expenses

21. Address plates and supplies.
22. Cash overages and shortages.
23. Commissions or fees to others for collecting.
24. Payments to credit organizations for investigations and reports.
25. Postage.
26. Transportation expenses, including transportation of customer bills and meter books under centralized billing procedure.
27. Transportation, meals, and incidental expenses.
28. Bank charges, exchange, and other fees for cashing and depositing customers' checks.
29. Forms for recording orders for services, removals, etc.
30. Rent of mechanical equipment.

905 – Miscellaneous Customer Accounts Expenses

This account shall include the cost of labor, materials used and expenses incurred not provided for in other accounts.

Labor

1. General clerical and stenographic work.
2. Miscellaneous labor.

Materials and expenses

3. Communication service.
4. Miscellaneous office supplies and expenses and stationery and printing other than those specifically provided for in accounts 902 and 903.

KAWC's Cost per Customer

As calculated below, KAWC's customer account services expense per customer was $25.03 for 2024. The cost pool used to calculate this average includes charges for Service Company services (e.g., call handling, billing, payment processing) and postage and forms expenses, which are incurred directly

by KAWC. It is necessary to adjust the Service Company's charges because electric utilities experience an average of 1.25 calls per customer compared to American Water's 0.70 calls per customer during 2024. Thus, the Service Company's expenses had to be increased, for comparison purposes, to reflect its costs if it had had 1.25 calls per customer.

Table 25: KAWC's Customer Account Service Expense per Customer

Kentucky American Water Company, Inc.				
	Cost Component	2024 Service Co Charges	Adjustment Fewer Calls For Water Cos. (A)	Adjusted
Service Company	Call processing, order processing, credit, bill collection, forms,	$2,282,918	$545,784	$2,828,702
	Customer payment processing (B)			116,050
KAWC	Customer Advocacy unit			570,176
			Cost Pool Total	$3,514,928
			Total Customers	140,426
			2024 Cost Per KAWC Customer	**$25.03**

Note A: Adjustment for American Water's fewer calls per customer because water utilities experience fewer call per customer than do electric utilities.

Call handling expenses		$701,306
Electric utility industry's avg calls/customer	1.25	
American Water's avg calls/customer	0.70	
Percent different	78%	0.78
Total Adjustment		$545,784

Note B: Estimated customer payment processing expenses

Number of customer bills	1,660,232
Bank charge per item	$0.0699
Total estimated annual expense	$116,050

Electric Utility Group Cost per Customer

Table 26 shows the calculation of customer account expense per customer for the electric utility comparison group. The underlying data was taken from the utilities' 2023 FERC Form 1, which is escalated for inflation to the mid-point of 2024 to produce costs per customer that are comparable with KAWC's 2024 cost per customer.

Table 26: Comparison Group Projected 2024 Customer Account Expense per Customer

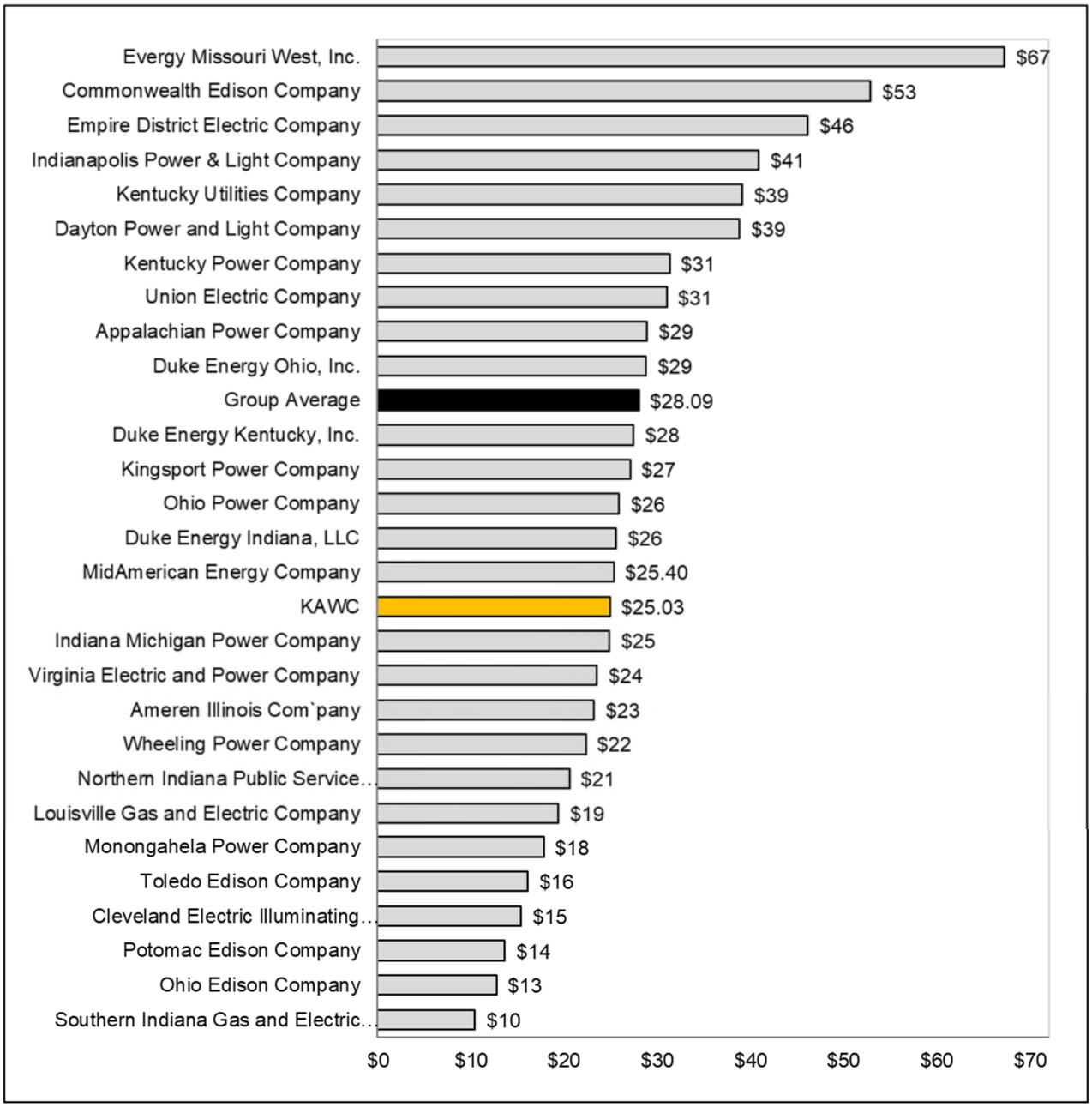
	Customer Accounts Services Cost Pool					Customer Account Service Expenses per Customer		
		Employee Benefits						
Comparison Group	Account 903 and 905	Employee Pension and Benefits	Payroll Taxes	Total Cost Pool	Total Retail Customers	Actual 2023	Inflation (CPI)	Proforma 2024
Ameren Illinois Company	$28,031,513	($1,353,526)	$1,068,234	$27,746,221	1,226,027	$22.63	2.97%	$23.30
Appalachian Power Company	26,958,283	(393,999)	574,752	27,139,036	965,517	28.11	2.97%	28.94
Cleveland Electric Illuminating Company	9,944,392	1,079,075	292,543	11,316,010	756,673	14.95	2.97%	15.40
Commonwealth Edison Company	197,074,440	7,772,276	7,580,418	212,427,134	4,130,538	51.43	2.97%	52.96
Dayton Power and Light Company	17,906,590	1,593,209	850,428	20,350,228	539,127	37.75	2.97%	38.87
Empire District Electric Company	6,252,339	1,595,255	419,129	8,266,723	183,990	44.93	2.97%	46.27
Duke Energy Indiana, LLC	21,316,218	344,679	653,495	22,314,393	894,160	24.96	2.97%	25.70
Duke Energy Kentucky, Inc.	3,705,188	160,134	178,321	4,043,643	151,127	26.76	2.97%	27.55
Duke Energy Ohio, Inc.	19,748,978	449,457	910,638	21,109,073	752,909	28.04	2.97%	28.87
Indiana Michigan Power Company	14,437,522	(6,245)	349,495	14,780,772	610,647	24.21	2.97%	24.92
Indianapolis Power & Light Company	17,872,813	2,172,329	781,101	20,826,244	523,395	39.79	2.97%	40.97
Evergy Missouri West, Inc.	21,928,320	134,742	441,064	22,504,125	343,879	65.44	2.97%	67.39
Kentucky Power Company	4,958,775	(75,501)	80,324	4,963,598	162,742	30.50	2.97%	31.41
Kentucky Utilities Company	19,669,701	1,278,179	737,424	21,685,304	569,612	38.07	2.97%	39.20
Kingsport Power Company	1,299,807	(26,212)	22,976	1,296,571	49,139	26.39	2.97%	27.17
Louisville Gas and Electric Company	7,478,847	445,525	285,090	8,209,463	434,120	18.91	2.97%	19.47
MidAmerican Energy Company	18,449,449	809,529	1,002,034	20,261,013	820,668	24.69	2.97%	25.42
Monongahela Power Company	5,939,385	682,871	253,957	6,876,213	396,728	17.33	2.97%	17.85
Northern Indiana Public Service Company	8,652,945	663,189	449,035	9,765,169	487,079	20.05	2.97%	20.64
Ohio Edison Company	14,126,668	(1,311,419)	448,632	13,263,881	1,069,766	12.40	2.97%	12.77
Ohio Power Company	38,088,145	(537,158)	867,627	38,418,614	1,523,794	25.21	2.97%	25.96
Potomac Edison Company	5,535,240	114,869	198,832	5,848,941	441,657	13.24	2.97%	13.64
Southern Indiana Gas and Electric Company	1,436,296	89,347	45,776	1,571,419	155,182	10.13	2.97%	10.43
Toledo Edison Company	4,441,497	378,663	128,863	4,949,022	315,061	15.71	2.97%	16.17
Union Electric Company	36,414,511	(235,768)	1,704,836	37,883,579	1,254,162	30.21	2.97%	31.10
Virginia Electric and Power Company	60,567,926	843,203	1,753,359	63,164,488	2,752,726	22.95	2.97%	23.63
Wheeling Power Company	897,823	(6,280)	9,616	901,159	41,401	21.77	2.97%	22.41
Average								$28.09

Source: FERC Form 1 (2023); Bureau of Labor Statistics; Concentric Energy Advisors analysis

Summary of Results

As shown in the table below, KAWC's 2024 cost per customer is below the 2024 average cost of the neighboring electric utility comparison group. More than half comparison group utilities have a higher cost than KAWC. Based on this comparison, it can be concluded that KAWC's total 2024 customer account expenses are reasonable.

Table 27: Electric Utility Comparison Group Cost per Customer



SECTION 8:

QUESTION 5 – NEED FOR SERVICE COMPANY SERVICES

Analysis of Services

An assessment was performed to determine whether the services provided to KAWC by the Service Company would be necessary if KAWC were not part of the American Water organization. The first step in this evaluation was to determine specifically what the Service Company does for KAWC. The matrix in Table 28 was created showing which entity—KAWC or a Service Company location—is responsible for each of the functions KAWC requires to ultimately provide service to its customers. This matrix was reviewed to determine: (1) if there was redundancy or overlap in the services being provided by the Service Company and (2) if Service Company services are typical of those needed by a stand-alone water and wastewater utility.

Upon review of Table 28, the following conclusions can be drawn:

- The services that the Service Company provides are necessary and are required for water and wastewater utilities.
- There is no redundancy or overlap in the services provided by the Service Company to KAWC. For all of the services listed in Table 28, there was only one entity that was primarily responsible for the service.

Table 28: Responsibility Matrix

P - Primarily Responsible **S - Provides Support**	Performed By:				
		American Water Service Company			
Water Company Function	KAWC	Customer Service Organization	Other Service Company	IT Service	Central Lab
Engineering and Construction Management					
CPS Preparation	**P**		**S**		
Five-Year System Planning	**P**		**S**		
Engineering Standards & Policies Development			**P**		
Project Design					
Major Projects (e.g., new treatment plant)	**P**		**S**		
Special Projects	**P/S**		**P/S**		
Minor Projects (e.g., pipelines)	**P**				
Construction Project Management					
Major Projects	**P**		**S**		
Special Projects	**P**		**S**		
Minor Projects	**P**				
Hydraulics Review	**P**		**S**		
Developers Extensions	**P**				
Tank Painting	**P**				
Water Quality and Purification					
Water Quality Standards Development	**P (1)**		**P (1)**		**S**
Research Studies	**S**		**P**		**S**
Water Quality Program Implementation	**P**		**S**		**S**
Water Treatment Operations & Maintenance	**P**		**S**		
Compliance Sampling	**P**				**S**
Testing/Other Sampling	**P**				**S**
Transmission and Distribution					
Preventive Maintenance Program Development	**P**		**S**		
System Maintenance	**P**				
Leak Detection	**P**				
Customer Service					
Community Relations	**P**		**S**		
Customer Contact	**P (2)**	**P (2)**			
Call Processing		**P**			
Service Order Processing	**P**	**S**			
Customer Credit	**P**	**P**			
Meter Reading	**P**			**S**	
Customer Bill Preparation	**S**	**S**		**P**	
Bill Collection	**S**	**P**		**S**	
Customer Payment Processing	**S**		**P**	**S**	
Meter Standards Development	**S**		**S**	**P**	
Meter Testing, Maintenance & Replacement	**P**				

Note 1: KAWC responsible for State regulations, Central Services responsible for Federal regulations

Note 2: KAWC provide in-person customer contact while Customer Service Organization provides customer phone contact

P - Primarily Responsible **S - Provides Support**	Performed By:				
		American Water Service Company			
Water Company Function	KAWC	Customer Service Organization	Other Service Company	IT Service	Central Lab
Financial Management					
Financial Planning	**P**		**S**		
Financings--Equity	**S**		**P**		
Financings--Long Term Debt & Preferred	**S**		**P (3)**		
Short Term Lines of Credit Arrangements	**S**		**P (3)**		
Investor Relations			**P**		
Insurance Program Administration	**S**		**P**		
Loss Control/Safety Program Administration	**P**		**S**		
Pension Fund Asset Management			**P**		
Cash Management/Disbursements			**P**		
Internal Auditing			**P**		
Budgeting and Variance Reporting					
Corporate Guidelines & Instructions			**P**		
Budget Preparation			**P**		
Revenue and O&M	**P**		**S**		
Depreciation and Interest Expense	**P**		**S**		
Budget Preparation--Service Company Charges	**S**	**S**	**P**	**S**	**S**
Capital Budget Preparation—Projects	**P**		**S**		
Capital Budget Preparation—Non-Project Work	**P**		**S**		
Prepare Monthly Budget Variance Report	**P**		**S**		
("Budget/Plan Analysis")					
Prepare Capital Project Budget Status Report	**P**		**S**		
Year-End Projections	**P**		**S**		
Accounting and Taxes					
Accounts Payable Accounting	**S**		**P**		
Payroll Accounting	**S**		**P**		
Work Order Accounting	**S**		**P**		
Fixed Asset Accounting	**S**		**P**		
Journal Entry Preparations--Billing Corrections	**S**		**P**		
Journal Entry Preparation--All Others	**S**		**P**		
Financial Statement Preparation	**S**		**P**		
State Commission Reporting	**S**		**P**		
Income Taxes--State			**P**		
Income Taxes--Federal			**P**		
Property Taxes	**S**		**P**		
Gross Receipts (Town) Taxes	**S**		**P**		

Note 3: Lines of credit are the responsibility of American Water Capital Corporation ("AWCC"). AWCC is also responsible for Corporate financings which may be distributed to the regulated subsidiaries. KAWC has the abilility to issue LTD.

P - Primarily Responsible **S - Provides Support**	Performed By:				
		American Water Service Company			
Water Company Function	KAWC	Customer Service Organization	Other Service Company	IT Service	Central Lab
Rates					
Rate Studies & Tariff Change Administration	**P**		**S**		
Rate Case Planning and Preparation	**S**		**P**		
Rate Case Administration	**S**		**P**		
Commission Inquiry Response	**S**		**P**		
Legal	**P**		**S**		
Purchasing and Materials Management – National (pipe, chemicals, meters, etc.)					
Specification Development	**S**		**P**		
Bid Solicitation	**S**		**P**		
Contract Administration	**S**		**P**		
Purchasing and Materials Management – State (state supplier service agreements)					
Specification Development	**P**		**S**		
Bid Solicitation	**P**		**S**		
Contract Administration	**P**		**S**		
Ordering	**P**		**S**		
Inventory Management	**P**				
Human Resources Management					
Benefit Program Development			**P**		
Benefits Program Administration			**P**		
Management Compensation Administration			**P**		
Wage & Salary Program Design			**P**		
Wage & Salary Administration	**S**		**P**		
Labor Negotiations--Wages	**S**		**P**		
Labor Negotiations--Benefits			**P**		
Labor Negotiations-- Work Rules	**P**		**S**		
Training Program Development	**S**		**P**		
Training--Course Delivery	**P/S**		**P/S**		
Affirmative Action/EEO--Plan Development	**S**		**P**		
Affirmative Action/EEO--Implementation	**P**		**S**		
Information Technology Services					
Service Company Data Centers					
System Operations & Maintenance				**P**	
Software Maintenance				**P**	
Network Administration	**S**			**P**	
Workstation Acquisition & Support	**S**			**P**	
Help Desk	**S**			**P**	

SECTION 9:

QUESTION 6 – APPROPRIATENESS OF GOVERNANCE PRACTICE

Definition of Governance Practices

Governance practices are internal controls designed to provide assurance that objectives are being achieved relating to operations, reporting and compliance. Among other things, this is achieved through control activities, which are defined as follows:

> *Control activities are the actions established through policies and procedures that help ensure that management's directives to mitigate risks to the achievement of objectives are carried out. Control activities are performed at all levels of the entity, at various stages within business processes, and over the technology environment.*
>
> Source: "Internal Control – Integrated Framework, Executive Summary," Committee of Sponsoring Organizations of the Treadway Commission

Governance Practices Associated with Service Company Charges

There are several ways by which KAWC exercises control over Service Company services and charges. The most important of these are described below.

1. Chief Operating Officer Oversight – The Chief Operating Officer (COO) is on the Executive Leadership Team (ELT) of American Water. This position is responsible for the overall performance of each operating company in American Water. As part of the ELT, the COO has equal say with other ELT members in major business decisions of American Water and has the ability to monitor Service Company performance quality and spending. The COO also addresses local concerns with each operating company president.
2. Operating Company Board Oversight – The KAWC board of directors includes members of the KAWC management team and external business and community leaders. The KAWC board has quarterly scheduled meetings each year to review and discuss financial, operational and other matters.
3. KAWC President's Oversight – The KAWC President is responsible for the overall performance of KAWC and, as such, monitors services and charges received from the Service Company. KAWC's President reports to the Deputy Chief Operating Officer who, in turn, reports to the Chief Operating Officer who has a significant voice in major business decisions that impact the Service Company's quality and cost of services.
4. CFO Operations and supporting staff (Finance team) – The Finance team is responsible for monitoring the overall financial performance of KAWC. This includes overseeing KAWC's

financial reporting process, performing revenue and expense analysis, the annual budgeting process, and monitoring internal control performance. Every month, the Finance team performs a detailed expense analysis that includes Service Company charges. Month-to-date actual and year-to-date actual performance is compared against budget and prior period actuals. The Finance team also reviews and investigates monthly Service Company charges based on the results of the team's analytical procedures in order to determine the appropriateness of the charges.

5. Service Company Budget Review/Approval – The Service Company Board of Directors (BOD) formally reviews and approves the budget for Service Company on an annual basis. The Service Company BOD consists of: (a) the AW ELT and (b) key Executive Management representatives from the Service Company. The Service Company's overall budget is assigned to each operating company, and the operating company consolidates the Service Company charges with its own direct spending to arrive at a total operating company budget. This is presented to the operating company's board of directors (e.g., Kentucky American) for their approval.

6. Major Project Review and Approval – Before major Service Company non-capital projects are undertaken, they must be reviewed and approved by American Water's Executive Leadership Team which includes the Deputy and Chief Operating Officers. The Deputy Chief Operating Officer, with significant input from his direct reports, has the ability to impact all new initiatives and projects before they are authorized. Major non-capital projects and initiatives for the Service Company are approved through the business planning process. As part of the business planning process a technology roadmap of initiatives is developed from American Water's vision, strategy, operational objectives and key business programs. The alignment of these initiatives with enterprise goals is approved by the Executive Leadership Team and key business leaders from various operational and functional areas of American Water. The roadmap is updated annually to produce a rolling roadmap and investment plan.

7. Capital Program Management (CPM) – CPM covers capital and asset planning and is employed throughout American Water, including the Service Company. CPM provides a full range of governance practices, including a formal protocol for assessing system needs, prioritizing capital expenditures, managing the capital program, approving project spending, delivering projects and measuring outputs. CPM ensures that:

    a. Capital expenditure plans are aligned with the strategic intent of the business

    b. The impact of capital expenditures is fully reflected in operating expense plans

    c. The impacts of these plans on state operating company budgets and operating results are understood

d. Effective controls are in place over budgets (through business plans) and individual capital projects (through appropriate authorization thresholds, management and reporting processes).

The CPM process was designed to optimize the effectiveness of asset investment. The process is managed at two levels for all American Water companies, including all KAWC Operating Units. Monthly meetings of the CPM are held to review capital spending compared to plan, review new project requests and review updates or modifications to existing projects. The Kentucky management team participates, as necessary, and provide the data used in the monthly review schedules.

8. Accounting and Financial Reporting – The Service Company follows the same accounting and financial reporting processes as American Water's regulated utilities. At month-end, the Service Company Finance team reviews key transactions and analyzes month-to-date variance to budget to ensure accuracy before the billing process takes place. Once completed, the Service Company bill is produced, and the actuals are directly charged or allocated to the states based on predetermined formulas. After the billing, Service Company Finance completes the monthly reports. At this time, the operating companies may question expenses and spending for better understanding of results. KAWC's Finance team reviews the monthly Service Company bill for accuracy and reasonableness on a monthly basis. Any errors or overcharges are corrected on a subsequent billing.

9. Operating Company Budget Variance Analysis – Each month a Service Company Affiliate Billing Analysis Report is prepared and provided to operating companies. This report allows operating companies to monitor their Service Company budget-versus-actual charges for the month and year-to-date.

10. Service Company Budget Variance Analysis - Each function within a Service Company is responsible for reviewing the budget-versus-actual charges for the month and year-to-date. On a monthly basis, Service Company actual results vs budget variances are reviewed with State Presidents as well as the ELT. Key variances by function are presented and discussed.

These are control activities that help ensure that Service Company charges to KAWC are necessary and reasonable.

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-AMERICAN WATER COMPANY FOR AN ADJUSTMENT OF RATES	**)** **)** **)**	**CASE NO. 2025-00122**

DIRECT TESTIMONY OF DEBA F. ATHER

May 16, 2025

Table of Contents

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Deba F. Ather, and my business address is 1 Water Street, Camden, NJ 08102.

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

A. I am employed by American Water Works Service Company, Inc. ("Service Company" or "AWWSC") as Senior Manager of Regulatory Services. Service Company is a wholly owned subsidiary of American Water Works Company, Inc. ("American Water") that provides services to Kentucky-American Water Company ("KAWC", "Kentucky-American" or "Company") and its affiliates.

Q. Please summarize your educational background and work experience.

A. I received a Bachelor of Science degree in Environmental Science from Rutgers University, New Brunswick. I have been employed by Service Company since March 2023 in my current role. Prior to my employment with Service Company, I worked in various roles for a global satellite company, followed by PECO Energy, an electric and gas utility under the parent company Exelon. I joined PECO's Safety department in 2012 as a Senior Business Analyst. Over the next 10 years, I held various positions of increasing responsibility within the Safety, Human Performance, and Regulatory Performance departments.

Q. What are your current employment responsibilities?

A. My duties consist of preparing, assisting, and reviewing regulatory filings and related activities for regulated subsidiaries of American Water. My responsibilities include the preparation of written testimony, exhibits, and work papers in support of rate applications and other regulatory filings as well as responding to data requests for American Water's regulated subsidiaries, including Kentucky-American.

Q. Have you previously testified before any regulatory commissions?

A. Yes. During my employment with PECO Energy, I testified before the Pennsylvania Public Utility Commission as a company witness in formal complaint hearings.

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

A. The purpose of my Direct Testimony is to sponsor and testify in support of the KAWC Affordability study.

Q. Please identify the exhibits you will be sponsoring and for which you will be providing testimony.

A. I am sponsoring Exhibit DFA-1: Affordability Analysis of Water Service, attached to my direct testimony.

II. AFFORDABILITY OF SERVICE

A. Introduction

Q. Please describe the concept of affordability.

A. The concept of affordability for water service is based on the idea that everyone should have access to drinking water service that is (1) safe, meaning it complies with the U.S. Safe Drinking Water Act and regulations promulgated by the U.S. Environmental Protection Agency ("EPA"); (2) reliable, so that it is resilient in the face of floods, droughts, and other climate risks; and (3) affordable, meaning that these services should be priced such that families and households can pay for these services without undue economic hardship.

Q. Why is the affordability of water service an important issue to the Company?

A. The Company knows that its water service is vital and that it must make necessary investments to continue to provide safe and reliable water service. The Company also

knows how important it is for that service to remain affordable. Maintaining affordability of service is an important objective for KAWC as discussed in the Direct Testimony of Company witness Burton.

Q. Please describe the Company's approach to assessing the affordability of its water service.

A. The Company assesses the affordability of its water service by comparing annual bills for water service to household income in the communities that we serve. Using this as a foundation, the Company's assessment of affordability is made up of two complementary analyses. The first analysis is an Enterprise-Level analysis of affordability, which considers the affordability of Kentucky-American's service at a high level over a multi-year period. The second analysis is a Community-Level analysis of affordability which is a more in-depth analysis than the Enterprise-Level analysis with a narrower focus. The Community-Level analysis looks at the affordability of service at proposed rates in this case for individual groups of customers using the most currently available household information on income, size, and ownership status from the U.S. Census Bureau and usage assumptions consistent with usage levels being used to set proposed rates in this case. Both analyses are further discussed below.

Q. Why are both of these approaches to assessing affordability of service important?

A. Both of these approaches are important in order to give a full, complete, and comprehensive picture of the affordability of the Company's services to its customers. The Enterprise-Level analysis on its own provides a historical and forward-looking view of the affordability of service over time but does not address current levels of affordability in any detail and certainly does not address affordability concerns for lower income customers,

which is important. Similarly, the Community-Level analysis looks at the affordability of service at proposed rates specifically in this case for individual groups of customers, and most importantly for lower income customers, but does not provide any larger historical context for the Company's rate proposals. Taken separately, these components provide useful and important information but do not provide a complete picture of the affordability of the Company's service. Taken together, these components provide a complete and comprehensive picture of the affordability of the Company's services to its customers.

Q. Has the Company provided an affordability analysis of its water service for the proposed rates in this case?

A. Yes. The Company's affordability study for water service is provided in Exhibit DFA-1. The exhibit contains both the Enterprise-Level Analysis and a Community-Level Analysis for the applicable service.

Q. Please summarize the conclusions of the Company's affordability analysis for the proposed rates in this case.

A. There are three conclusions that can be drawn from the Company's affordability study:

- The affordability of the Company's water service indicates that the way the Company has invested in and managed its water systems has indeed been for the long-term benefit of our customers.
- The Company's water service has been, is, and is expected to continue to be affordable for the vast majority of its residential customers, including under the rates proposed in this case.
- There are, however, groups of customers, particularly lower income customers, for whom the affordability of water service can be challenging.

Q. How did the Company perform its affordability analysis?

A. Such an assessment requires at least two data points – the average monthly or annual bill for water service and some measure of household income for the customer population. From these two data points, a metric is developed called the Bill-to-Income ("BTI") Ratio, which is defined as annual water bills divided by estimated annual household income. For the broader residential customer base, commonly available household income measures are measures of income at different percentiles. Median Household Income ("MHI"), which is household income at a 50th percentile level (50% of households in a given population have incomes greater than the median and 50% of households have incomes lower than the median), can be measured at a statewide or community level and can be paired with a data set that provides the number of customers served in each community to arrive at a weighted number that represents MHI for the Company's entire service territory.

At a more detailed level, individual household income, household size, and home ownership data is considered across a full range of households. Using this information, affordability can then be assessed at a more detailed level based on various income levels and bill amounts for water service. A variety of household information on income, size, and ownership status is readily and publicly available from the U.S. Census Bureau and the American Community Survey ("ACS") at the national, state, county, and community levels.

Q. Is there a generally accepted standard for the affordability of water service?

A. Historically, water affordability has been evaluated using numerous methods and metrics with no specific method being academically recognized as a right or wrong approach for assessing affordability. Of the various methods utilized, bill to income ratios along with

an established percentage of income dedicated to water and wastewater service has been the predominant approach for assessing affordability. In general, bills have been considered to be unaffordable when they exceed a specified threshold in the range of 2% to 4.5% of annual income. In a recent 2024 national water and wastewater affordability analysis report to Congress, the EPA used bills resulting in 3% and 4.5% of annual income as thresholds to define combined water and wastewater bills as affordable.[1]

B. Enterprise-Level Analysis

Q. Please describe the company's Enterprise-Level Analysis of affordability of service.

A. The Enterprise-Level Analysis of affordability for water service is a historical comparison of average monthly bills to household income for the Company's residential customers. This view looks at average monthly residential bills for all customers over time compared to MHI for the Company's residential customer base.

Q. What is the purpose and value of this Enterprise-Level Analysis?

A. The purpose of the Enterprise-Level Analysis is to provide a high-level historical perspective on how the affordability of service has been trending over time and how it is expected to continue to trend under proposed rates. Although the Company proposes to increase customer rates in this proceeding, the important metric to consider is the impact that proposed rates and bills have on customer finances and how those impacts have trended over time and are expected to trend going forward. This metric must consider not only trends in rates and bills but trends in household income. The value of the BTI Ratio metric proposed by the Company is that it considers all of these factors. The Company's BTI Ratio as presented in the Company's affordability analyses is therefore the appropriate

[1] U.S. EPA. (2024) Water Affordability Needs Assessment: Report to Congress. (Report No. 830-R-24-015). Pages 33 - 36.

metric to use when looking at the impact of the Company's rates for water service on customers.

Q. Why do you use average monthly residential bills in your Enterprise-Level Analysis?

A. Average monthly bills are used because this is the best representation of the total revenue the Company has collected from its residential customers over time, which is in turn the best metric on which to evaluate the total affordability picture for residential customers. Average monthly bills consider total residential revenue along with the total number of customers each year that revenue is collected from and the total level of water sales each year that revenue amount is collected over. This provides the most complete representation of what customers have paid in the past and what they may be expected to pay in the future for the Company's water service.

Q. Why do you use MHI in your Enterprise-Level Analysis?

A. The Enterprise-Level Analysis uses MHI for two reasons. The first is that MHI is a widely recognized, well understood, and readily available measure of household income in different communities and states and is available for different breakdowns of household demographics (homeowners versus renters, for example). The second is that MHI is consistent in scope with the concept of average monthly bills, which is the first input in the analysis that I previously discussed. Average monthly bills encompass all residential customers, not a subset. MHI also encompasses the entire residential customer base, not a subset. It is important in any analysis of affordability that there is consistency in assumptions between bills used in the analysis and household income metrics used in the analysis. This is something that many analyses of affordability of water service do not

consider. Use of MHI as a measure of total population income brings that consistency to the analysis when paired with average monthly bills.

Q. How do you determine MHI for the customers in the Company's service territory?

A. The MHI for the Company's service territory is a weighted average of the number of customers the Company serves in each community in the service territory and the median household income in each of those communities for owner-occupied and single-unit, renter-occupied homes as reported by data in the ACS based on the most recent year's available data (2023 in this proceeding). The relationship between this service territory–specific figure and the MHI for the Commonwealth of Kentucky for 2023 (also provided at the community level through the ACS) is then applied to historical MHI data for the Commonwealth of Kentucky to arrive at historical MHI data for the KAWC service territory.

Q. What are the results of your Enterprise-Level Analysis of affordability for water service?

A. The charts below compare historical average monthly water bills to MHI for KAWC customers from 2012 through 2024 stated in absolute terms and stated in terms of BTI Ratio, along with estimated average monthly bills under the Company's proposed rates in this case and estimated MHI for KAWC customers during the forecast test year. The data shows that the BTI Ratios for water service for KAWC customers have remained steady and increased very slightly from 0.57% in 2023 to 0.59% in 2024. The BTI Ratio at the median income level is expected to be 0.68% under the Company's proposed rates in this case.

CHART 1

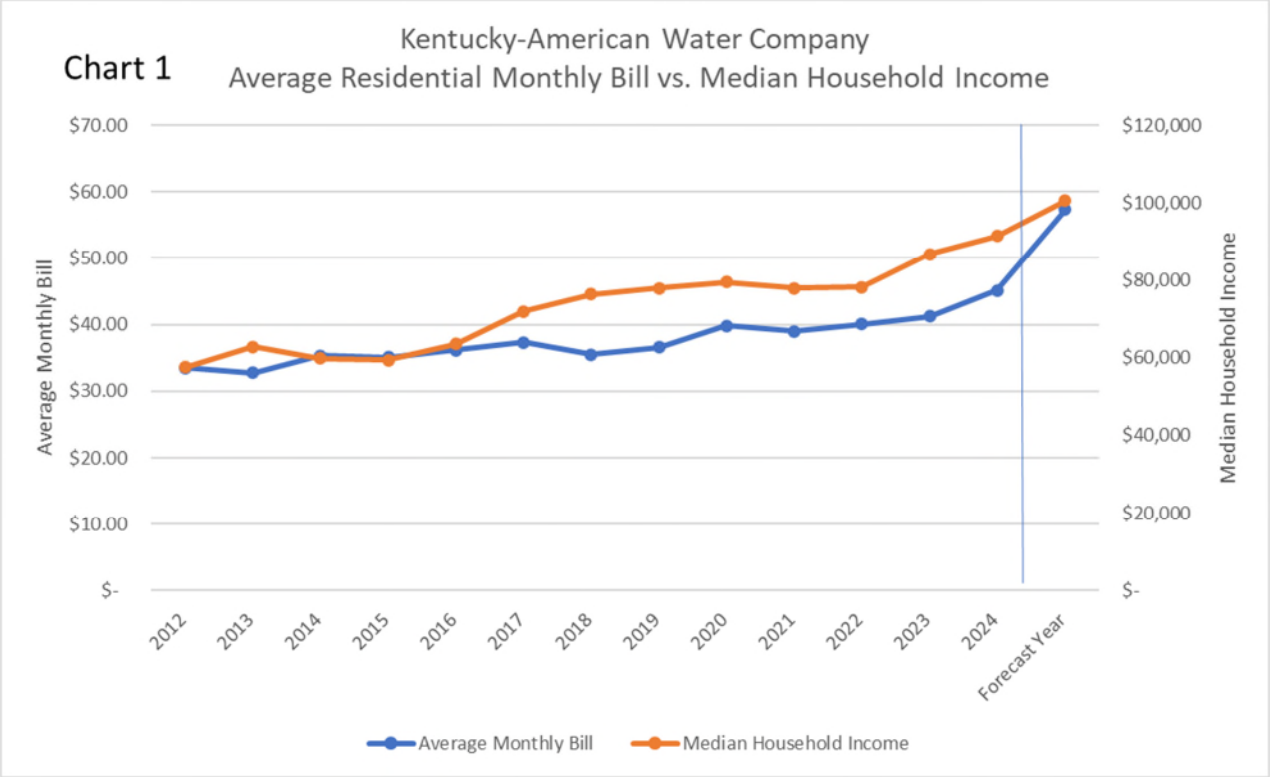
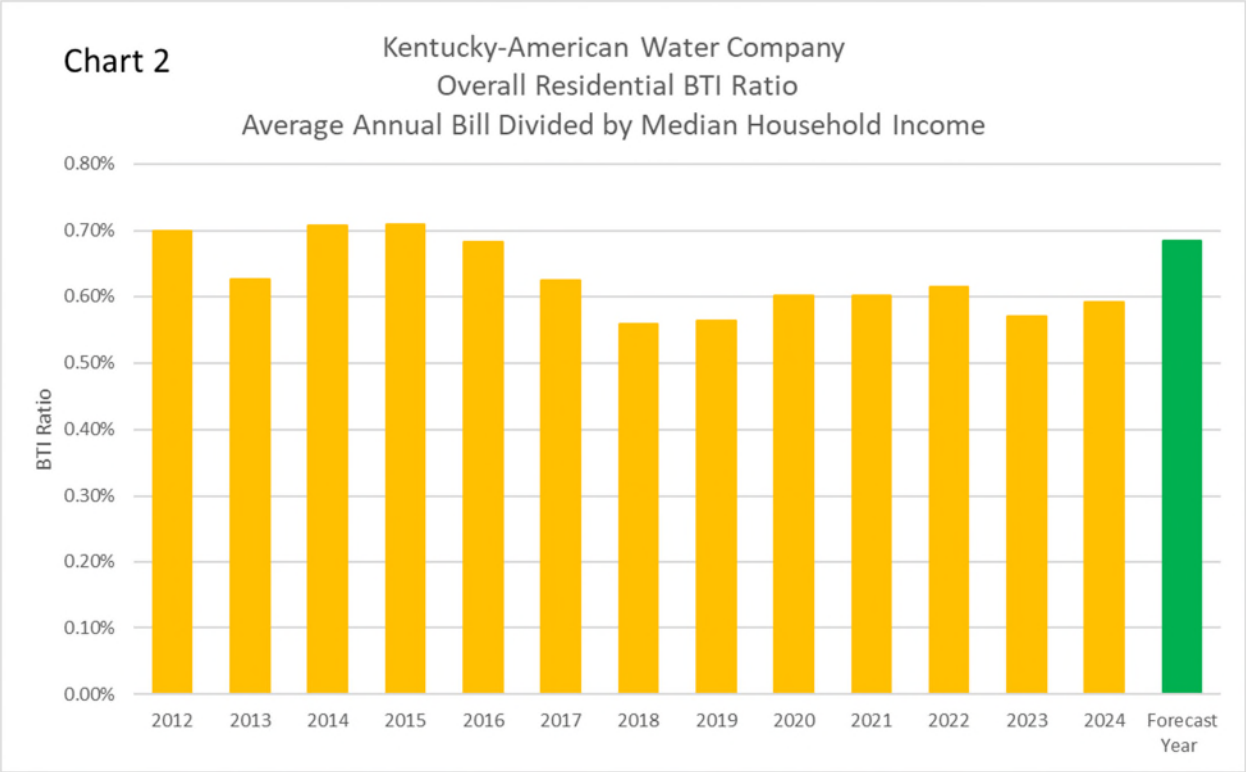


CHART 2



Q. Does the Enterprise-Level Analysis indicate whether service is affordable or unaffordable, in your opinion?

A. Not necessarily. The overall assessment of the affordability of service is not a yes or no question. The affordability of water service will never be that simple. One can generally measure average water bills against any given benchmark and come up with a yes or no answer, but affordability of service is a continuum, and that is what the Company's Community-Level analysis, which I describe next in my Direct Testimony, shows. There will always be customers for whom water service is more affordable than for others depending on demographics and income levels. This is true across all of the communities that KAWC serves, including even the wealthiest communities that the Company serves.

Q. Does your Enterprise-Level Analysis speak at all to the affordability of service for lower income customers?

A. No, it does not, and it is not intended to. The Enterprise-Level analysis is one component of the Company's comprehensive analysis of affordability in this proceeding, and it is not intended to target any specific customer group. The Enterprise-Level analysis is intended to show the long-term impact of changes in rates and usage on the general affordability of water service for our customers. Specific examination of the affordability of the Company's water service for different customer groups, and specifically for lower income customers, is the focus of the Company's Community-Level analysis, which I describe next.

C. Community-Level Analysis

Q. Please describe the Company's Community-Level Analysis of affordability of service.

A. The Community-Level Analysis takes a deeper dive into the affordability of water service at a more granular level. The Community-Level analysis looks at the affordability of service at proposed rates in this case for individual groups of customers using the most current available information on household income, size, and home ownership data from the U.S. Census Bureau and usage assumptions consistent with usage levels being used to set proposed rates in this case. This analysis is done community by community at a zip-code level.

Q. What is the purpose of this Community-Level Analysis?

A. The purpose of the Community-Level Analysis is twofold. The first is to estimate at the community or zip code level the number of customers the Company serves at different levels of household income stated in terms of multiples of the Federal Poverty Level ("FPL"). The second is to estimate, by community and household income level, the number of customers for whom bills for Basic Water Service (which I will define later in my testimony) is expected to be different percentages of household income at the Company's proposed rates.

Q. How is this analysis different from the Enterprise-Level Analysis you previously presented?

A. The Enterprise-Level Analysis and the Community-Level Analysis are two different but complementary views of affordability. As previously stated, the purpose of the Enterprise-Level analysis is to provide a high-level historical perspective on how the affordability of service has been trending over time and how it is expected to continue to trend under

proposed rates. The Community-Level analysis is a deeper but narrower view of affordability that looks specifically at proposed rates in this case and the most currently available household demographic information across the Company's service territory.

Q. Is there academic research that supports the Company's approach to assessing the affordability of service at this detailed level?

A. Yes. Cardoso and Wichman outline a framework for assessing affordability of water service that uses the full distribution of household income at the local level rather than MHI or some other static representative level of income and uses varying levels of water usage at the individual household level instead of a static representative level of water usage.[2] While the methodology presented here differs from Cardoso and Wichman in certain areas, the goal remains the same, which is to analyze affordability at the individual customer level and identify customer groups where affordability of service may be an issue.

Q. What information is needed to conduct an analysis of the affordability of service at this detailed level?

A. The following information is used to assess the affordability of service at the community and individual customer level:

- The number of customers served in each community.
- The distribution of owner-occupied households and renter-occupied households by income level in each community.
- The percentage of occupied housing units that are owner-occupied households or renter-occupied households that are not in multi-dwelling buildings in each community.

[2] Cardoso, Diego S. and Wichman, Casey J., "Water Affordability in the United States," Water Resources Research, vol. 58, issue 12 (2020).

- The average number of persons per household in each community for both owner-occupied and renter-occupied households.
- The distribution of the size of households (one-person, two-person, etc.) for households of different income levels.
- The standard definition of Basic Water Service.
- Current or proposed rate structures.

I will return to the Community-Level Analysis after I discuss the concept of Basic Water Service.

Q. Please describe the concept of basic water service.

A. For this analysis, we define Basic Water Service ("BWS") to be water that is used for indoor domestic use and is expected to be relatively constant from month to month (e.g. water needed for drinking, cooking, cleaning, sanitation, etc.). This differentiates BWS from total water sales, which also includes discretionary outdoor use of water in the summertime (lawn maintenance, swimming, recreation, etc.) which is not usually the focus of public policy discussions on the affordability of water service.

Q. How do you define BWS for the purposes of your customer-level affordability analysis?

A. For the purpose of the Company's affordability analysis, BWS is defined to be 40 gallons of water per household member per day.

Q. How did you arrive at 40 gallons per household member per day for your definition of basic water service?

A. The specific estimate of 40 gallons of water per household member per day is based on the monthly residential use per customer for the forecast year used in the development of the

Company's proposed billing determinants as sponsored by Company witness McClellan. For non-summer months, average residential monthly usage in the forecast period is 2,827 gallons per customer. The Company's water affordability analysis shows an average of 2.36 persons per household in 2023 for the Company's residential customers. Dividing the 2,827 gallons per month figure by 2.36 persons per household divided by 30.5 days per month (on average) results in 39.3 gallons per person per day, which is just slightly lower than the 40 gallons per household member per day used for the definition of BWS in the Company's affordability analyses. This analysis confirms that the Company's definition of BWS is consistent with the levels of residential usage used to develop proposed rates in this proceeding.

Q. Why is it important that both household size and household income be considered in this analysis?

A. Household size and household income are both important because Federal Poverty Level, which is the measure of household income most often used as a metric for affordability studies and customer assistance programs, depends on both household size and income. Also, because water consumption in the home increases as the number of people in the home increases and because lower income households tend to have fewer people in them on average, it is important to differentiate between larger households and small households at different levels of income in conducting the affordability analysis

Q. Can you discuss FPL in more detail?

A. FPL is a measurement set by the U.S. Department of Health and Human Services of the minimum amount of annual income that is needed for individuals and families to pay for essentials, such as room and board, clothes, and transportation. The FPL considers the

number of people in a household, their income, and the state in which they live. For the Commonwealth of Kentucky, the FPL guidelines for 2025 are set at $15,650 for a household size of one and $5,500 per year for each additional household member.

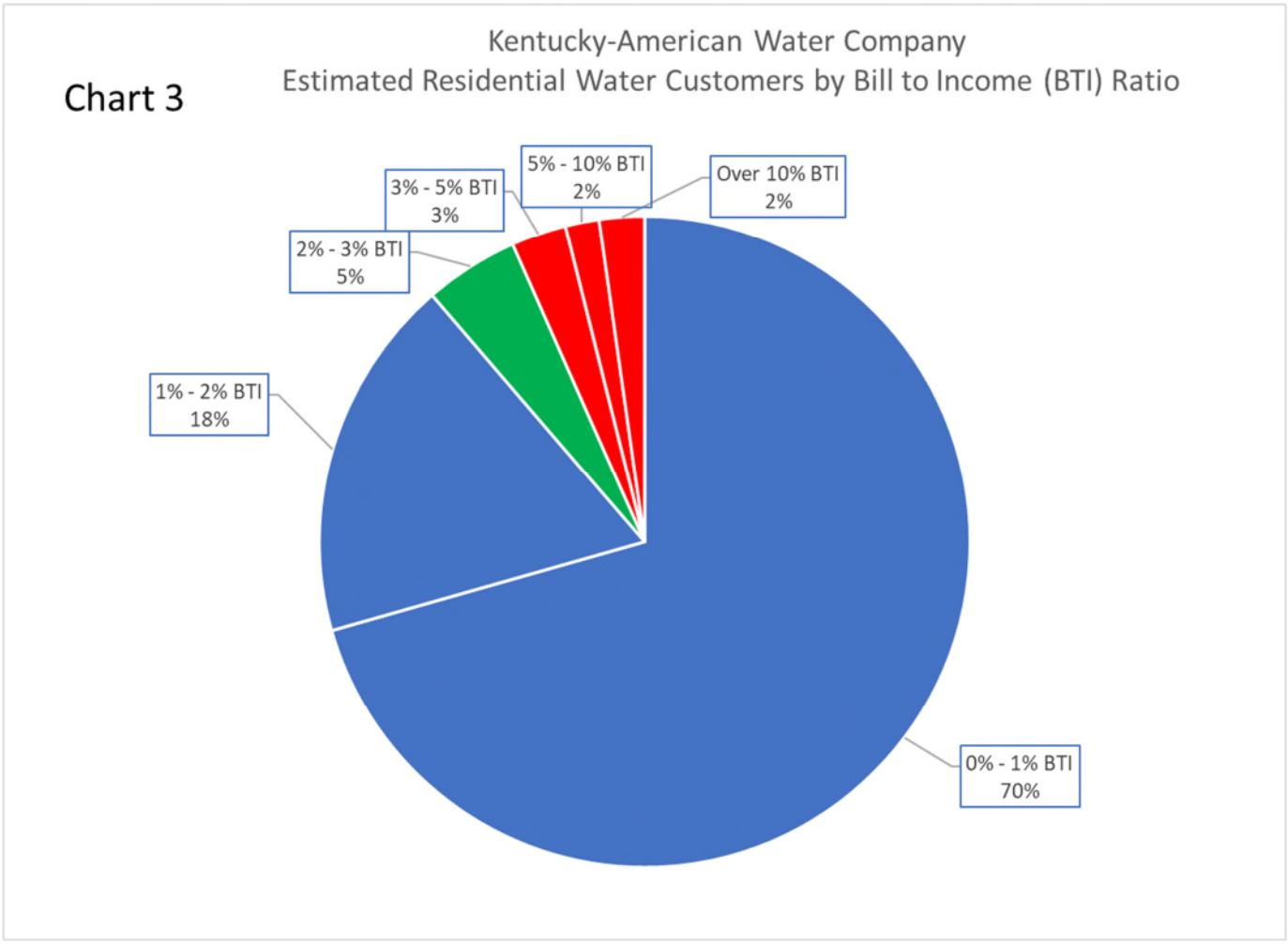
Q. What information does your Community-Level Analysis provide?

A. The Community-Level Analysis produces a complete set of data that consists of estimates for the number of customers in the Company's service territory by community and zip code, and then by annual household income and household size within each community and zip code. From this, the number of customers by multiples of FPL can also be estimated. Also included in this data is a bill amount at proposed rates differentiated by household size that reflects the Company's assumed level of BWS that I described earlier. From this, BTI Ratios can then be estimated by income level and household size, and by multiples of FPL, for each community and zip code the Company serves.

Q. What does your Community-Level Analysis show?

A. Chart 3 below shows the percentage of residential customers for whom bills for Basic Water Service under the Company's proposed rates are expected to be at different multiples of household income.

CHART 3



This chart shows that under the Company's proposed rate structure, the Affordability Index metric (discussed below) for the Company's service territory in total is 88% under proposed rates for water service, meaning that 88% of our residential water customers can expect to see bills for BWS to be less than 2% of their household income. The Company estimates that there are approximately 14,324 residential water customers that will see bills for BWS above 2% of their household income, which is approximately 12% of the total customer population for water service.

Q. Please describe the Affordability Index.

A. The Affordability Index ("AI") is a metric that reflects the percentage of a group of customers for whom BWS is expected to be less than a given percentage of annual household income. Consistent with my previous discussion in testimony regarding standards for affordability, the Company uses 2% of household income as the benchmark for this metric, which is at the conservative end of the range of affordability often cited. As an example, if, for a certain group of customers, it is estimated that 80% of those customers will have bills for BWS less than 2% of annual household income, the AI value for that group of customers is 80%.

The AI metric is designed to reflect the percentage of residential customers in a state, community, or demographic group for whom BWS is expected to cost 2% or less of annual household income. An AI value of 100% means that all customers within a selected group can expect BWS at less than 2% of annual household income. An AI value of 70% means that approximately 70% of customers within a selected group can expect BWS at less than 2% of annual household income, and 30% of customers in that group can expect BWS to cost more than 2% of annual household income. The AI value is calculated based on modeling of proposed rates and community-level household information that I have previously described in my testimony.

Q. Why do you use 2% of annual household income as your benchmark for affordability of service?

A. The 2% benchmark is frequently used as an industry standard for the affordability threshold of an individual household. This percentage of MHI standard has become the common water affordability standard used today.

Q. Does your analysis consider customers who rent in multi-family buildings without individual meters?

A. No. The Company's Community-Level Analysis only considers customers that are assumed to be direct customers of the Company, meaning that they are directly responsible for payment of services to the Company. Direct customers are assumed to be owner-occupied households and single-family, renter-occupied households as reported by ACS data.

Q. Why does your Community-Level Analysis only concentrate on customers that are direct customers of the company?

A. For indirect customers of the Company (e.g., renters in multi-family buildings), it is impossible to know definitively what these households pay in rent for water service. Presumably, building owners that receive water service from KAWC are recovering those costs through rents, but rents are generally market-based and not cost-based with property owners charging what the market will bear. There is no way to know if owners are overcharging or undercharging renters or if they are also charging renters for building water service that renters themselves are not actually using.

Q. Will the Company's proposed change in rates have an impact on people who use the Company's service but are not direct customers of the Company?

A. It is impossible to know what the impact of the Company's proposed rates will be on indirect customers of the Company. Rents may increase in part to recover increases in water service costs, but rents change for many reasons, and the extent to which any increases can be attributable to the Company's proposed rates and the timing of such increases cannot be determined.

D. Conclusions

Q. How is this affordability information useful?

A. Assessing affordability information of water service for the entire residential customer population can demonstrate whether customers, in general, are having or would have difficulty paying their water bills under the Company's current or proposed tariff structure. Assessing affordability information about water service for lower-income customers can indicate the number of customers that may be having trouble paying their utility bills, where the customers are in the Company's service territory, and the extent to which those bills may pose challenges. This can, in turn, inform decision-makers about the size and scope of efforts that may be needed to help these vulnerable customers better afford water service, both in terms of general rate design proposals that can reduce the cost of Basic Water Service for all customers, including lower-income customers, and customer assistance programs that may include customer grants, tariff discounts, levelized billing, and outreach programs. Company witness Robert Burton discusses the Company's existing programs that help our more financially vulnerable customers pay their bills.

Q. What conclusions do you draw based on the Company's enterprise-level and community-level affordability studies?

A. As noted above, there are three conclusions that can be drawn from the Company's affordability study:

- The affordability of the Company's water service from 2012 through the forecast test period indicates that the way the Company has invested in and managed its water systems has indeed been for the long-term benefit of our customers.

- The Company's water service has been, is, and is expected to continue to be affordable for the majority of its residential customers, including under the rates proposed in this case.
- There are, however, groups of customers for whom the affordability of water service can be challenging.

Q. Does the Company's affordability analyses provide any additional useful information about the value of the Company's water service?

A. Indeed, it does. All stakeholders (regulators, customers, consumer advocates, community leaders, employees, shareholders, etc.) benefit from a financially sound utility providing safe, reliable, and affordable service to its customers. The Company's analysis demonstrates that KAWC's management of its operations and maintenance costs and its decisions on how to execute on the capital investments needed to provide safe and reliable water service has been and continues to be done in a responsible and effective manner and continues to result in reasonable rates for our customers.

Q. Does this conclude your prepared direct testimony?

A. Yes, it does.

VERIFICATION

STATE OF NEW JERSEY)
) **SS:**
COUNTY OF CAMDEN)

The undersigned, Deba F. Ather, being duly sworn, deposes and says that she is Senior Manager of Regulatory Services for American Water Works Service Company, Inc., that she has personal knowledge of the matters set forth in the accompanying testimony for which she is identified as the responsible witness, and that the answers contained therein are true and correct to the best of her information, knowledge and belief.

Deba F. Ather

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 7 day of May, 2025.

Notary Public

My Commission Expires:
10/2/29

MERESA M YAGER
Notary Public, State of New Jersey
My Commission Expires Oct 2, 2029

Kentucky-American Water Company
Water Affordability Analysis

Residential Statistics	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Forecast Year
KY Revenue	$ 37,712,582	$ 42,860,958	$ 44,454,703	$ 44,202,295	$ 47,988,440	$ 48,304,403	$ 50,358,450	$ 52,520,983	$ 50,509,099	$ 52,892,674	$ 58,306,583	$ 57,543,572	$ 59,564,318	$ 61,783,228	$ 68,229,464	$ 88,082,142
KY Sales	6,225,215	5,855,415	6,095,861	5,615,124	5,802,958	5,870,951	5,954,950	5,805,215	5,696,379	5,925,895	6,080,017	5,874,579	6,009,950	6,153,290	6,124,025	6,053,426
KY Customers	108,169	108,971	110,473	112,429	113,268	114,637	115,987	117,203	118,472	120,557	122,008	123,090	124,036	124,975	126,021	127,964
KY Statewide Median Income	$ 41,100	$ 39,860	$ 41,090	$ 44,880	$ 42,790	$ 42,390	$ 45,370	$ 51,350	$ 54,560	$ 55,660	$ 56,760	$ 55,630	$ 55,870	$ 61,980	$ 65,352	$ 71,797
KY Customer Median Income	$ 57,544	$ 55,808	$ 57,530	$ 62,836	$ 59,910	$ 59,350	$ 63,523	$ 71,895	$ 76,389	$ 77,930	$ 79,470	$ 77,888	$ 78,224	$ 86,778	$ 91,499	$ 100,522
KY Average Price	$ 6.06	$ 7.32	$ 7.29	$ 7.87	$ 8.27	$ 8.23	$ 8.46	$ 9.05	$ 8.87	$ 8.93	$ 9.59	$ 9.80	$ 9.91	$ 10.04	$ 11.14	$ 14.55
KY Average Monthly Bill	$ 29.05	$ 32.78	$ 33.53	$ 32.76	$ 35.31	$ 35.11	$ 36.18	$ 37.34	$ 35.53	$ 36.56	$ 39.82	$ 38.96	$ 40.02	$ 41.20	$ 45.12	$ 57.36
KY Average Monthly Use	4.80	4.48	4.60	4.16	4.27	4.27	4.28	4.13	4.01	4.10	4.15	3.98	4.04	4.10	4.05	3.94
KY BTI Ratio	0.61%	0.70%	0.70%	0.63%	0.71%	0.71%	0.68%	0.62%	0.56%	0.56%	0.60%	0.60%	0.61%	0.57%	0.59%	0.68%

1.4001 State adjustment factor to reflect the difference between statewide MHI and MHI for AW customers in the state

Chart 2

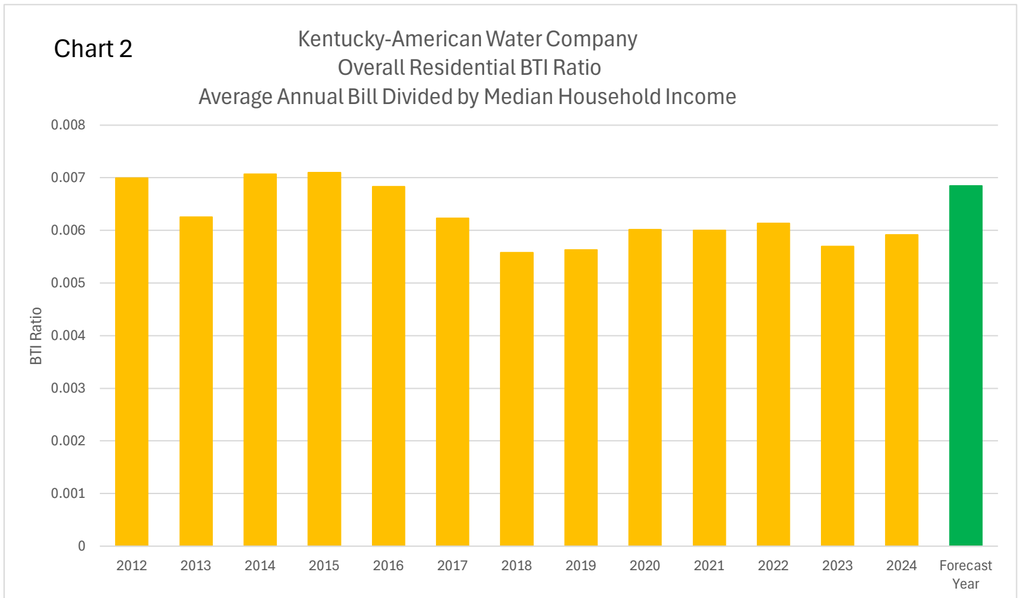
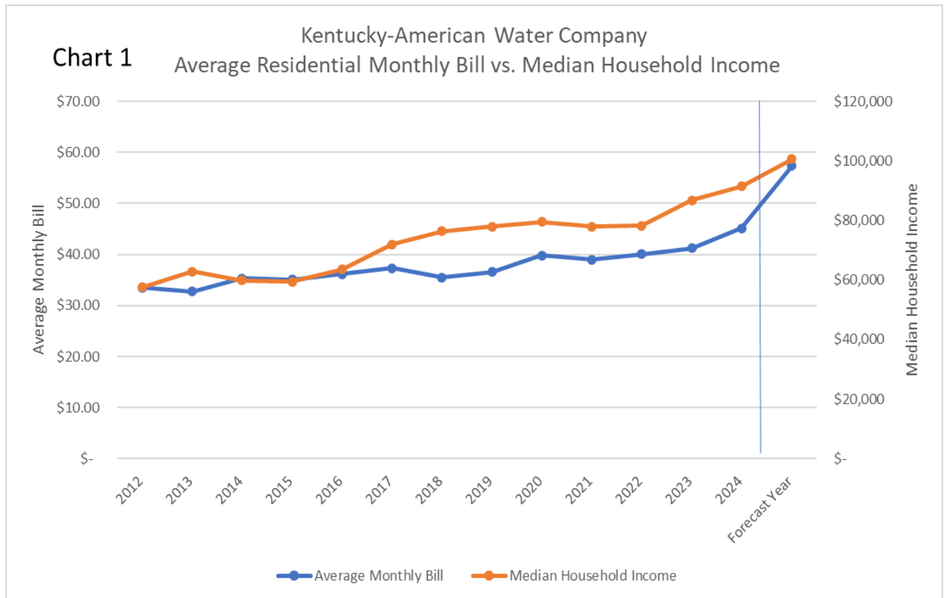


Chart 1



Kentucky-American Water Company
Water Affordability Summary - Bills for Basic Water Service
Customer Counts as of December 31, 2024

Affordability Target: 2%

Income Level	Size	Basic Water Service	Average Income	Customers	Proposed Base Bill	--- Customers by FPL --- 0-50%	50%-100%	100%-150%	150%-200%	200%-250%	250%-300%	300%-350%	350%-400%	400%-450%	450%-500%	Over 500%
$0-$5k	1	1200	$ 3,000	1985	$ 30.80	1985	0	0	0	0	0	0	0	0	0	0
$0-$5k	2	2400	$ 3,000	757	$ 42.15	757	0	0	0	0	0	0	0	0	0	0
$0-$5k	3	3600	$ 3,000	245	$ 53.51	245	0	0	0	0	0	0	0	0	0	0
$0-$5k	4	4800	$ 3,000	154	$ 64.86	154	0	0	0	0	0	0	0	0	0	0
$0-$5k	5	6000	$ 3,000	76	$ 76.21	76	0	0	0	0	0	0	0	0	0	0
$0-$5k	6	7200	$ 3,000	27	$ 87.56	27	0	0	0	0	0	0	0	0	0	0
$0-$5k	7	8400	$ 3,000	19	$ 98.91	19	0	0	0	0	0	0	0	0	0	0
$5-$10k	1	1200	$ 7,500	1161	$ 30.80	697	464	0	0	0	0	0	0	0	0	0
$5-$10k	2	2400	$ 7,500	452	$ 42.15	452	0	0	0	0	0	0	0	0	0	0
$5-$10k	3	3600	$ 7,500	147	$ 53.51	147	0	0	0	0	0	0	0	0	0	0
$5-$10k	4	4800	$ 7,500	92	$ 64.86	92	0	0	0	0	0	0	0	0	0	0
$5-$10k	5	6000	$ 7,500	47	$ 76.21	47	0	0	0	0	0	0	0	0	0	0
$5-$10k	6	7200	$ 7,500	16	$ 87.56	16	0	0	0	0	0	0	0	0	0	0
$5-$10k	7	8400	$ 7,500	10	$ 98.91	10	0	0	0	0	0	0	0	0	0	0
$10-$15k	1	1200	$ 12,500	2250	$ 30.80	0	2250	0	0	0	0	0	0	0	0	0
$10-$15k	2	2400	$ 12,500	500	$ 42.15	48.2	451.8	0	0	0	0	0	0	0	0	0
$10-$15k	3	3600	$ 12,500	168	$ 53.51	116.4	51.6	0	0	0	0	0	0	0	0	0
$10-$15k	4	4800	$ 12,500	98	$ 64.86	98	0	0	0	0	0	0	0	0	0	0
$10-$15k	5	6000	$ 12,500	48	$ 76.21	48	0	0	0	0	0	0	0	0	0	0
$10-$15k	6	7200	$ 12,500	14	$ 87.56	14	0	0	0	0	0	0	0	0	0	0
$10-$15k	7	8400	$ 12,500	6	$ 98.91	6	0	0	0	0	0	0	0	0	0	0
$15-$20k	1	1200	$ 17,500	2037	$ 30.80	0	203.5	1833.5	0	0	0	0	0	0	0	0
$15-$20k	2	2400	$ 17,500	510	$ 42.15	0	510	0	0	0	0	0	0	0	0	0
$15-$20k	3	3600	$ 17,500	169	$ 53.51	0	169	0	0	0	0	0	0	0	0	0
$15-$20k	4	4800	$ 17,500	97	$ 64.86	19.6	77.4	0	0	0	0	0	0	0	0	0
$15-$20k	5	6000	$ 17,500	47	$ 76.21	38	9	0	0	0	0	0	0	0	0	0
$15-$20k	6	7200	$ 17,500	15	$ 87.56	15	0	0	0	0	0	0	0	0	0	0
$15-$20k	7	8400	$ 17,500	5	$ 98.91	5	0	0	0	0	0	0	0	0	0	0
$20-$25k	1	1200	$ 22,500	2395	$ 30.80	0	0	1676.2	718.8	0	0	0	0	0	0	0
$20-$25k	2	2400	$ 22,500	841	$ 42.15	0	169	672	0	0	0	0	0	0	0	0
$20-$25k	3	3600	$ 22,500	279	$ 53.51	0	279	0	0	0	0	0	0	0	0	0
$20-$25k	4	4800	$ 22,500	173	$ 64.86	0	173	0	0	0	0	0	0	0	0	0
$20-$25k	5	6000	$ 22,500	84	$ 76.21	0	84	0	0	0	0	0	0	0	0	0
$20-$25k	6	7200	$ 22,500	32	$ 87.56	9	23	0	0	0	0	0	0	0	0	0
$20-$25k	7	8400	$ 22,500	19	$ 98.91	18	1	0	0	0	0	0	0	0	0	0
$25-$35k	1	1200	$ 22,500	4486	$ 30.80	0	0	0	2694.2	1791.8	0	0	0	0	0	0
$25-$35k	2	2400	$ 30,000	2103	$ 42.15	0	0	1471	632	0	0	0	0	0	0	0
$25-$35k	3	3600	$ 30,000	691	$ 53.51	0	133.8	557.2	0	0	0	0	0	0	0	0
$25-$35k	4	4800	$ 30,000	460	$ 64.86	0	326.1	133.9	0	0	0	0	0	0	0	0
$25-$35k	5	6000	$ 30,000	233	$ 76.21	0	233	0	0	0	0	0	0	0	0	0
$25-$35k	6	7200	$ 30,000	85	$ 87.56	0	85	0	0	0	0	0	0	0	0	0
$25-$35k	7	8400	$ 30,000	58	$ 98.91	0	58	0	0	0	0	0	0	0	0	0
$35-$50k	1	1200	$ 37,500	5640	$ 30.80	0	0	0	0	1688.4	2824	1127.6	0	0	0	0
$35-$50k	2	2400	$ 37,500	4072	$ 42.15	0	0	0	2032.5	2039.5	0	0	0	0	0	0
$35-$50k	3	3600	$ 37,500	1369	$ 53.51	0	0	411.9	957.1	0	0	0	0	0	0	0
$35-$50k	4	4800	$ 37,500	933	$ 64.86	0	0	840.4	92.6	0	0	0	0	0	0	0
$35-$50k	5	6000	$ 37,500	488	$ 76.21	0	95.2	392.8	0	0	0	0	0	0	0	0
$35-$50k	6	7200	$ 37,500	177	$ 87.56	0	94	83	0	0	0	0	0	0	0	0
$35-$50k	7	8400	$ 37,500	121	$ 98.91	0	109.6	11.4	0	0	0	0	0	0	0	0
$50-$75k	1	1200	$ 62,500	7599	$ 30.80	0	0	0	0	0	0	1518	2286	2278	1517	0
$50-$75k	2	2400	$ 62,500	7195	$ 42.15	0	0	0	0	719.7	2882.8	3592.5	0	0	0	0
$50-$75k	3	3600	$ 62,500	2559	$ 53.51	0	0	0	257.8	1532.8	768.4	0	0	0	0	0
$50-$75k	4	4800	$ 62,500	1769	$ 64.86	0	0	0	1059.8	709.2	0	0	0	0	0	0
$50-$75k	5	6000	$ 62,500	923	$ 76.21	0	0	276.1	646.9	0	0	0	0	0	0	0
$50-$75k	6	7200	$ 62,500	322	$ 87.56	0	0	196.6	125.4	0	0	0	0	0	0	0
$50-$75k	7	8400	$ 62,500	228	$ 98.91	0	0	206.3	21.7	0	0	0	0	0	0	0
$75-$100k	1	1200	$ 87,500	4365	$ 30.80	0	0	0	0	0	0	0	0	0	437.5	3927.5
$75-$100k	2	2400	$ 87,500	6381	$ 42.15	0	0	0	0	0	0	0	2551.8	2553.8	1275.4	0
$75-$100k	3	3600	$ 87,500	2509	$ 53.51	0	0	0	0	0	500.2	1257.5	751.3	0	0	0
$75-$100k	4	4800	$ 87,500	1950	$ 64.86	0	0	0	0	390.4	1363.4	196.2	0	0	0	0
$75-$100k	5	6000	$ 87,500	904	$ 76.21	0	0	0	0	724.6	179.4	0	0	0	0	0
$75-$100k	6	7200	$ 87,500	338	$ 87.56	0	0	0	164	174	0	0	0	0	0	0
$75-$100k	7	8400	$ 87,500	211	$ 98.91	0	0	0	190.2	20.8	0	0	0	0	0	0

--- Average Bills by FPL Multiple ---

Size	0-50%	50%-100%	100%-150%	150%-200%	200%-250%	250%-300%
1	30.8	30.8	30.8	30.8	30.8	30.8
2	42.15	42.15	42.15	42.15	42.15	42.15
3	53.51	53.51	53.51	53.51	53.51	53.51
4	64.86	64.86	64.86	64.86	64.86	64.86
5	76.21	76.21	76.21	76.21	76.21	76.21
6	87.56	87.56	87.56	87.56	87.56	87.56
7	98.91	98.91	98.91	98.91	98.91	98.91

Size	0-50%	50%-100%	100%-150%	150%-200%	200%-250%	250%-300%
1	7825	15650	23475	31300	39125	46950
2	10575	21150	31725	42300	52875	63450
3	13325	26650	39975	53300	66625	79950
4	16075	32150	48225	64300	80375	96450
5	18825	37650	56475	75300	94125	112950
6	21575	43150	64725	86300	107875	129450
7	24325	48650	72975	97300	121625	145950

Size	0-50%	50%-100%	100%-150%	150%-200%	200%-250%	250%-300%
1	0.04723323	0.023616613	0.015744409	0.011808307	0.009446645	0.007872204
2	0.04782979	0.023914894	0.015943262	0.011957447	0.009565957	0.007971631
3	0.04818912	0.024094559	0.016063039	0.01204728	0.009637824	0.00803152
4	0.04841804	0.02420902	0.016139347	0.01210451	0.009683608	0.008069673
5	0.04858008	0.02429004	0.01619336	0.01214502	0.009716016	0.00809668
6	0.04870081	0.024350406	0.016233604	0.012175203	0.009740162	0.008116802
7	0.04879424	0.024397122	0.016264748	0.012198561	0.009758849	0.008132374

Income	Customers	Flagged	AI
Over $150k	29187	0	100%
$100-$150k	24060	0	100%
$75-$100k	16658	0	100%
$50-$75k	20595	118	99%
$35-$50k	12800	917	93%
$25-$35k	8116	1320	84%
$20-$25k	3823	1428	63%
$15-$20k	2880	2269	21%
$10-$15k	3084	3084	0%
$5-$10k	1925	1925	0%
$0-$5k	3263	3263	0%

Income Level	Size	Basic Water Service	Average Income	Customers	Proposed Base Bill	--- Customers by FPL --- 0-50%	50%-100%	100%-150%	150%-200%	200%-250%	250%-300%	300%-350%	350%-400%	400%-450%	450%-500%	Over 500%
$100-$150k	1	1200	$ 125,000	4298	$ 30.80	0	0	0	0	0	0	0	0	0	0	4298
$100-$150k	2	2400	$ 125,000	9391	$ 42.15	0	0	0	0	0	0	0	0	0	938.4	8452.6
$100-$150k	3	3600	$ 125,000	4255	$ 53.51	0	0	0	0	0	0	0	424.4	1276.2	1276.2	1278.2
$100-$150k	4	4800	$ 125,000	3605	$ 64.86	0	0	0	0	0	0	1079.9	1083.9	1081.9	359.3	0
$100-$150k	5	6000	$ 125,000	1586	$ 76.21	0	0	0	0	0	475.2	479.2	631.6	0	0	0
$100-$150k	6	7200	$ 125,000	596	$ 87.56	0	0	0	0	115.8	243.6	236.6	0	0	0	0
$100-$150k	7	8400	$ 125,000	329	$ 98.91	0	0	0	0	130.2	167	31.8	0	0	0	0
Over $150k	1	1200	$ 200,000	3622	$ 30.80	0	0	0	0	0	0	0	0	0	0	3622
Over $150k	2	2400	$ 200,000	10874	$ 42.15	0	0	0	0	0	0	0	0	0	0	10874
Over $150k	3	3600	$ 200,000	5698	$ 53.51	0	0	0	0	0	0	0	0	0	0	5698
Over $150k	4	4800	$ 200,000	5446	$ 64.86	0	0	0	0	0	0	0	0	0	543.5	4902.5
Over $150k	5	6000	$ 200,000	2265	$ 76.21	0	0	0	0	0	0	0	0	451.6	452.6	1360.8
Over $150k	6	7200	$ 200,000	844	$ 87.56	0	0	0	0	0	0	0	168.4	170.4	250.6	254.6
Over $150k	7	8400	$ 200,000	438	$ 98.91	0	0	0	0	0	0	86.6	86.6	135.9	87.6	41.3
			Total:	126391		5159.2	6050	8762.3	9593	10037.2	9404	9605.9	7984	7947.8	7138.1	44709.5
			Avg. Proposed Base Bill	$ 46.19		$ 41.70	$ 45.50	$ 46.84	$ 47.20	$ 47.06	$ 48.12	$ 47.05	$ 47.92	$ 47.69	$ 48.40	$ 44.75
			Avg. Household Income	$ 98,731		$ 5,203	$ 17,775	$ 29,382	$ 39,018	$ 50,868	$ 66,311	$ 76,479	$ 93,986	$ 102,189	$ 116,738	$ 166,584
			Average BTI Ratio:	0.56%		9.62%	3.07%	1.91%	1.45%	1.11%	0.87%	0.74%	0.61%	0.56%	0.50%	0.32%

Median Household Income 91,054

BTI Ratio: 0.61%

Average Use for Basic Service: 2827

Size	0-50%	50%-100%	100%-150%	150%-200%	200%-250%	250%-300%	300%-350%	350%-400%	400%-450%	450%-500%	Over 500%	Total
1	2682	2917.5	3509.7	3413	3480.2	2824	2645.6	2286	2278	1954.5	11847.5	5159.2
2	1257.2	1130.8	2143	2664.5	2759.2	2882.8	3592.5	2551.8	2553.8	2213.8	19326.6	6050
3	508.4	633.4	969.1	1214.9	1532.8	1268.6	1257.5	1175.7	1276.2	1276.2	6976.2	8762.3
4	363.6	576.5	974.3	1152.4	1099.6	1363.4	1276.1	1083.9	1081.9	902.8	4902.5	9593
5	209	421.2	668.9	646.9	724.6	654.6	479.2	631.6	451.6	452.6	1360.8	10037.2
6	81	202	279.6	289.4	289.8	243.6	236.6	168.4	170.4	250.6	254.6	9404
7	58	168.6	217.7	211.9	151	167	118.4	86.6	135.9	87.6	41.3	9605.9
												7984
												7947.8
												7138.1
												44709.5

	BTI 0%-1%	BTI 1%-2%	BTI 2%-3%	BTI 3%-4%	BTI 4%-5%	BTI 5%-6%	BTI 6%-7%	BTI 7%-8%	BTI 8%-9%	BTI 9%-10%	BTI Over 10%
	89236.7	22830.1	5911.7	2539.4	917.1	669.6	377.6	425.5	360.4	288.1	2834.8
Total Customers - Affordability Concern from Data Table:	5159.2	6050	3115	0	0	0	0	0	0	0	0
Affordability Percentage from Data Table:	1	1	0.3555	0	0	0	0	0	0	0	0

		0	1	2	3	4	5	6	7	8	9	10
		0%-1%	1%-2%	2%-3%	3%-4%	4%-5%	5%-6%	6%-7%	7%-8%	8%-9%	9%-10%	Over 10%
0-50%	1	0	0	0	0	203.2	669.6	377.6	425.5	360.4	288.1	2834.8
50%-100%	2	0	0	2796.7	2539.4	713.9	0	0	0	0	0	0
100%-150%	3	0	5647.3	3115	0	0	0	0	0	0	0	0
150%-200%	4	0	9593	0	0	0	0	0	0	0	0	0
200%-250%	5	2447.4	7589.8	0	0	0	0	0	0	0	0	0
250%-300%	6	9404	0	0	0	0	0	0	0	0	0	0
300%-350%	7	9605.9	0	0	0	0	0	0	0	0	0	0
350%-400%	8	7984	0	0	0	0	0	0	0	0	0	0
400%-450%	9	7947.8	0	0	0	0	0	0	0	0	0	0
450%-500%	10	7138.1	0	0	0	0	0	0	0	0	0	0
Over 500%	11	44709.5	0	0	0	0	0	0	0	0	0	0

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-AMERICAN WATER COMPANY FOR AN ADJUSTMENT OF RATES	**)** **)** **)**	**CASE NO. 2025-00122**

DIRECT TESTIMONY OF ANN E. BULKLEY

May 16, 2025

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name, affiliation and business address.

A. My name is Ann E. Bulkley. I am a Principal at The Brattle Group ("Brattle"). My business address is One Beacon Street, Suite 2600, Boston, Massachusetts 02108.

Q. On whose behalf are you submitting this direct testimony?

A. I am submitting this direct testimony before the Kentucky Public Service Commission ("Commission") on behalf of Kentucky-American Water Company ("KAWC" or the "Company"), a wholly-owned subsidiary of American Water Works Company, Inc. ("AWK").

Q. Please describe your education and experience.

A. I hold a Bachelor's degree in Economics and Finance from Simmons College and a Master's degree in Economics from Boston University, with over 30 years of experience consulting to the regulated utility industry. I have advised numerous energy and utility clients on a wide range of financial and economic issues with primary concentrations in valuation and utility rate matters. Many of these assignments have included the determination of the cost of capital for valuation and ratemaking purposes. My resume and a summary of testimony that I have filed in other proceedings are presented in more detail in Appendix A.

Q. What is the purpose of your direct testimony?

A. The purpose of my direct testimony is to present evidence and provide a recommendation regarding the appropriate return on equity ("ROE") and to provide an assessment of the reasonableness of KAWC's proposed capital structure for ratemaking purposes for the Company's water utility operations.

Q. Are you sponsoring any exhibits in support of your direct testimony?

A. Yes. My analyses and recommendations are supported by the data presented in Exhibits AEB-1 through AEB-10.

Q. Please provide a brief overview of the analyses that led to your ROE recommendation.

A. I relied on the results of several analytical approaches to estimate the costs of equity for the Company. I have first developed a proxy group of utility companies that face risks generally comparable to those faced by KAWC. I have not limited the proxy group to water utilities, but rather have included a broader group of utilities that face risk similar to KAWC because a proxy group composed only of water utilities would result in a small group of companies for which data is limited. To that proxy group, I have applied the constant growth form of the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), and the Empirical Capital Asset Pricing Model ("ECAPM"). My recommendation also takes into consideration the Company's relative business and regulatory risk as compared with the proxy group, and the Company's proposed capital structures as compared with the capital structures of the operating utilities of the companies contained in the proxy group. Although I do not make specific adjustments to my ROE recommendation for these factors, I consider them in the aggregate when determining where my recommended ROE falls within the range of the analytical results.

Q. How is the remainder of your direct testimony organized?

A. The remainder of my direct testimony is organized as follows:

- Section II provides a summary of my analyses and conclusions.
- Section III reviews the regulatory guidelines pertinent to the development of the cost of capital.

- Section IV discusses current and projected capital market conditions and the effect of those conditions on KAWC's cost of equity.

- Section V explains my selection of the proxy group for KAWC.

- Section VI describes my analyses and the analytical basis for my recommendation of the appropriate ROE for KAWC.

- Section VII provides a discussion of specific regulatory, business, and financial risks that have a direct bearing on the ROE to be authorized for KAWC in this case.

- Section VIII provides an assessment of the reasonableness of KAWC's proposed capital structure relative to the proxy group.

- Section IX presents my conclusions and recommendations.

II. SUMMARY OF ANALYSIS AND CONCLUSIONS

Q. Please summarize the key factors considered in your analyses and upon which you base your recommended ROE.

A. The key factors that I have considered in my cost of equity analyses and recommended ROE for the Company in this proceeding are:

- The United States Supreme Court's *Hope* and *Bluefield* decisions[1] established the standards for determining a fair and reasonable authorized ROE for public utilities, including consistency of the allowed return with the returns of other businesses having similar risk, adequacy of the return to provide access to capital and support credit quality, and the requirement that the result lead to just and reasonable rates.

- The effect of current and prospective capital market conditions on the cost of equity estimation models and on investors' return requirements.

- The results of several analytical approaches that provide estimates of the Company's cost of equity. Because the Company's authorized ROE should be a forward-looking estimate over the period during which the rates will be in effect, these analyses rely on forward-looking inputs and assumptions (*e.g.*, projected

[1] *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) ("*Hope*"); *Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virgini*a, 262 U.S. 679 (1923) ("*Bluefield*").

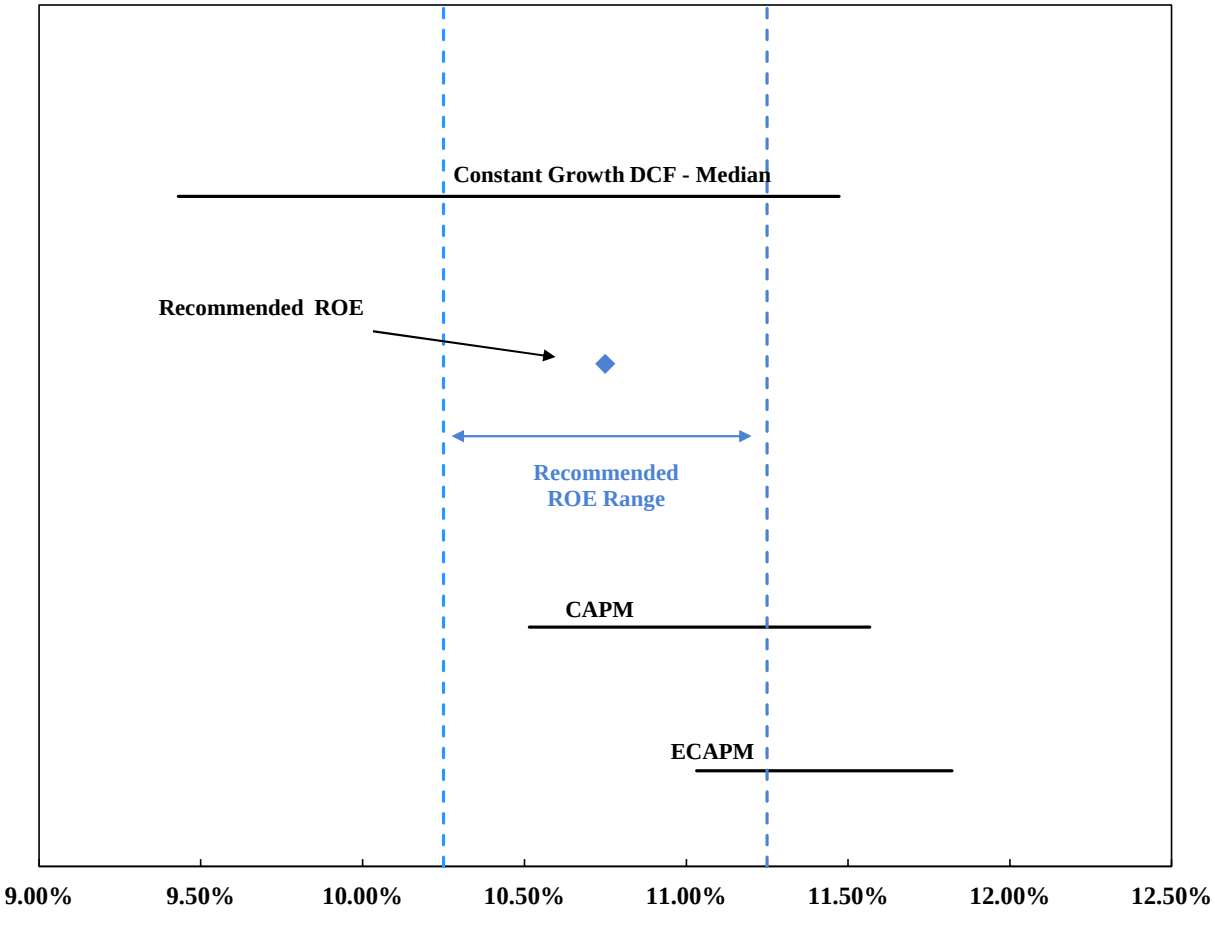
analyst growth rates in the DCF model, forecasted risk-free rate and market risk premium in the CAPM analysis).

- Although the companies in my proxy group are generally comparable to KAWC, each company is unique, and no two companies have the exact same business and financial risk profiles. Accordingly, I have considered the Company's regulatory, business, and financial risks relative to the proxy group of comparable companies in determining where the Company's ROE should fall within the reasonable range of analytical results to appropriately account for any residual differences in risk.

Q. What are the results of the models that you have used to estimate the cost of equity for KAWC?

A. Figure 1 (also see Exhibit AEB-1) summarizes the range of results produced by the constant growth DCF, CAPM, and ECAPM analyses.

Figure 1: Summary of ROE Results



Q. What is your conclusion regarding the appropriate authorized ROE for KAWC in this proceeding?

A. Considering the analytical results presented in Figure 1, current and prospective capital market conditions, as well as the level of regulatory, business, and financial risk faced by KAWC's water operations relative to the proxy group, a range for the authorized ROE from 10.25 percent to 11.25 percent, which takes into consideration both the low and high end of the range of results in the models, is reasonable. Taking into consideration the results of the analytical models, current market conditions, and the Company's relative risk, an ROE of 10.75 percent is reasonable and appropriate.

Q. Is the Company's requested capital structure reasonable and appropriate?

A. Yes. The Company's proposed common equity ratio of 52.26 percent for the thirteen-month period ending December 31, 2026, i**s** lower than the average actual equity ratios of the utility operating subsidiaries of the proxy group companies, and well within the range of the equity ratios for those same companies.

III. REGULATORY GUIDELINES

Q. Please describe the guiding principles to be used in establishing the cost of capital for a regulated utility.

A. The U.S. Supreme Court's precedent-setting *Hope* and *Bluefield* cases established the standards for determining the fairness and reasonableness of a utility's authorized ROE. Among the standards established by the Court in those cases are: (1) consistency with other businesses having similar or comparable risks; (2) adequacy of the return to support credit quality and access to capital; and (3) the principle that the specific means of arriving at a fair return are not important, only that the end result leads to just and reasonable rates.[2]

[2] *Bluefield*, 262 U.S. at 692-93; *Hope*, 320 U.S. at 603.

Q. Is fixing a proper rate of return just about protecting the utility's interests?

A. No. As the Court noted in *Bluefield,* a proper rate of return not only assures "confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit [but also] enable[s the utility] to raise the money necessary for the proper discharge of its public duties."[3] As the Court went on to explain in *Hope*, "[t]the rate-making process … involves balancing of the investor and consumer interests."[4]

Q. Has the Commission provided similar guidance in establishing the appropriate return on common equity?

A. Yes. For example, the Commission has stated that it must "balance the financial integrity of the utility with the interests of the consumer and the statutory obligation that rates be fair, just and reasonable."[5]

Q. Why is it important for a utility to be allowed the opportunity to earn a return that is adequate to attract capital at reasonable terms?

A. A return that is adequate to attract capital at reasonable terms enables KAWC to continue to efficiently provide safe, reliable water service while maintaining its financial integrity. That return should be commensurate with returns expected elsewhere in the market for investments of equivalent risk. If it is not, debt and equity investors will seek alternative investment opportunities for which the expected return reflects the perceived risks, thereby inhibiting KAWC's ability to attract capital at reasonable cost. When the Company is

---

[3] *Bluefield*, 262 U.S. at 693.
[4] *Hope*, 320 U.S. at 603.
[5] Case No. 2023-00191, *Electronic Application of Kentucky-American Water Company for an Adjustment of Rates, A Certificate of Public Convenience and Necessity for Installation of Advanced Metering Infrastructure, Approval of Regulatory and Accounting Treatments, and Tariff Revisions* (KY PSC May 3, 2023), Order at 36-37.

afforded a reasonable opportunity to earn its market-based cost of capital, a fair and reasonable balance is achieved between customers' and shareholders' interests.

Q. Is a utility's ability to attract capital also affected by the ROEs authorized for other utilities?

A. Yes. Utilities compete directly for capital with other investments of similar risk, which include other water, natural gas, and electric utilities. Therefore, the ROE authorized for a utility sends an important signal to investors regarding whether there is regulatory support for financial integrity, dividends, growth, and fair compensation for business and financial risk. The cost of capital represents an opportunity cost to investors. If higher returns are available elsewhere for other investments of comparable risk over the same time-period, investors have an incentive to direct their capital to those alternative investments. Thus, an authorized ROE significantly below authorized ROEs for other water, natural gas, and electric utilities can inhibit the utility's ability to attract capital for investment.

Q. What is the standard for setting the ROE in a jurisdiction?

A. The stand-alone ratemaking principle is the foundation of jurisdictional ratemaking. This principle requires that the rates charged in any operating jurisdiction be for the costs incurred in that jurisdiction. The stand-alone ratemaking principle ensures that customers in each jurisdiction only pay for the costs of the service provided in that jurisdiction, which is not influenced by the business operations in other operating companies. In order to maintain this principle, the cost of equity analysis is performed for an individual operating company as a stand-alone entity. As such, I have evaluated the investor-required return for KAWC's operations in Kentucky.

Q. Does the fact that the Company is wholly-owned by AWK, a publicly-traded company, affect your analysis?

A. No. In this proceeding, consistent with stand-alone ratemaking principles, it is appropriate to establish the cost of equity for KAWC, not their publicly-traded parent, AWK. More importantly, however, it is appropriate to establish a cost of equity and capital structure that provides KAWC the ability to attract capital on reasonable terms, both on a stand-alone basis and within AWK. Although the Company is committed to investing the required capital to provide safe and reliable service, because it is a subsidiary of AWK, the Company competes with the other AWK subsidiaries for proactive investment capital. In determining how to allocate its finite proactive capital resources, it would be reasonable for AWK to consider the authorized ROE of each of its subsidiaries.

Q. Is the regulatory framework and the authorized ROE and equity ratio important to the financial community?

A. Yes. The regulatory framework is one of the most important factors in investors' assessments of the risk of utilities. Specifically, the authorized ROE and equity ratio for regulated utilities is very important for determining the degree of regulatory support for a utility's creditworthiness and financial stability in the jurisdiction. To the extent that authorized returns in a jurisdiction are lower than the returns that have been authorized more broadly, such actions are considered by both debt and equity investors in the overall risk assessment of the regulatory jurisdiction in which the company operates. In other words, the authorized ROE and equity ratio may affect the cost of borrowing and can serve as a signal to equity investors about the risks associated with equity investment in a company.

Q. What are your conclusions regarding regulatory guidelines?

A. The ratemaking process is premised on the principle that, in order for investors and companies to commit the capital needed to provide safe and reliable utility services, a utility must have a reasonable opportunity to recover the return of, and the market-required return on, its invested capital. Accordingly, the Commission's order in this proceeding should establish rates that provide the Company with a reasonable opportunity to earn a ROE that is: (1) adequate to attract capital at reasonable terms; (2) sufficient to ensure its financial integrity; and (3) commensurate with returns on investments in enterprises with similar risk. It is important for the ROE authorized in this proceeding to take into consideration current and projected capital market conditions, as well as investors' expectations and requirements for both risks and returns. Because utility operations are capital-intensive, regulatory decisions should enable the utility to attract capital at reasonable terms under a variety of economic and financial market conditions. Providing the opportunity to earn a market-based cost of capital supports the financial integrity of the Company, which is in the interest of both customers and shareholders.

IV. CAPITAL MARKET CONDITIONS

Q. Why is it important to analyze capital market conditions?

A. Capital market conditions influence cost of equity models by affecting inputs in the model at the time the analysis is performed. While the ROE that is established in a rate proceeding is intended to be forward-looking, the analyst uses current and projected market data, specifically stock prices, dividends, growth rates and interest rates, in the models to estimate the required return for the subject company.

Analysts and regulatory commissions recognize the importance of considering how

these conditions impact cost of equity estimation models when determining the appropriate range and recommended ROE for a future period. For example, if investors do not expect current market conditions to be sustained in the future, it is possible that the cost of equity estimation models may not provide an accurate estimate of investors' required return during that rate period. Therefore, it is important to consider projected market data to estimate the return of the forward-looking period.

Q. How do market conditions affect the cost of equity models?

A. The cost of equity models rely on various assumptions that are directly affected by market conditions. For example, in this section, I specifically address: (1) sustained elevated levels of inflation, (2) uncertainty in federal monetary policy related to the changes in administration and (3) increased interest rates that are expected to remain elevated over the next few years. Interest rates, which are affected by inflation and monetary policy, are directly used in the capital asset pricing model, and indirectly affect the dividend yield in the DCF model.

Q. What has the level of inflation been over the past few years?

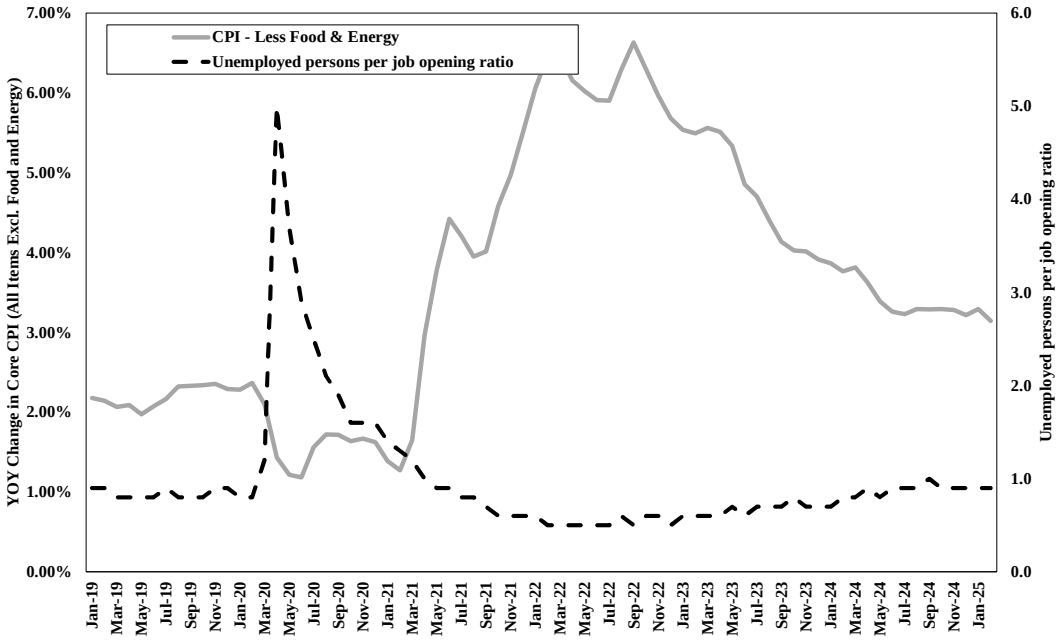
A. As shown in Figure 2, year-over-year core inflation increased steadily beginning in early 2021, rising from 1.40 percent in January 2021 to a high of 6.64 percent in September 2022, which was the largest 12-month increase since 1982.[6] While core inflation has declined in response to the Federal Reserve's monetary policy, it continues to remain significantly above the Federal Reserve's target level of 2.00 percent.

Because the Federal Reserve's dual mandate is to promote stable prices and employment, considering employment data, in addition to interest rates, is important. The

[6] Reade Pickert, "Core US inflation rises to 40-year high, securing big Fed hike," *Bloomberg*, October 13, 2022.

ratio of unemployed persons per job opening was 0.90 in February 2025 (the most recent data available at the time of this testimony) and has been consistently below 1.00 since April 2021, indicating a relatively tight labor market. Sustained strength in the labor market has allowed the Federal Reserve to prioritize reducing inflation by pursuing the necessary restrictive monetary policy needed to achieve its 2.00 percent target benchmark.

Figure 2: Core Inflation and Unemployed Persons-to-Job Openings, January 2019 to February 2025[7]



Q. What policy actions has the Federal Reserve enacted to respond to increased inflation?

A. The dramatic increase in inflation prompted the Federal Reserve to pursue an aggressive normalization of monetary policy, removing the accommodative policy programs used to mitigate the economic effects of COVID-19. Between the March 2022 Federal Open

[7] Figure 2 presents the year-over-year change in core inflation, as measured by the Consumer Price Index ("CPI") excluding food and energy prices as published by the Bureau of Labor Statistics. I have considered core inflation because it is the preferred inflation indicator of the Federal Reserve for determining the direction of monetary policy. Core inflation is preferred by the Federal Reserve because it removes the effect of food and energy prices, which can be highly volatile.

Market Committee ("FOMC") meeting and the July 2023 FOMC meeting, the Federal Reserve increased the target federal funds rate through a series of increases from a range of 0.00 – 0.25 percent to a range of 5.25 percent to 5.50 percent.

Q. How did yields on long-term government bonds respond to the Federal Reserve's normalization of monetary policy?

A. Since the Federal Reserve's December 2021 meeting, the yield on 10-year Treasury bonds increased by over 350 basis points, increasing from 1.47 percent on December 15, 2021 to a peak of 4.98 percent in October 2023. It currently remains well above 2021 levels (i.e., 4.26 percent as of April 8, 2025).[8]

Q. Did the Federal Reserve recently reduce the federal funds rates?

A. Yes. The Federal Reserve did recently reduce the federal funds rate by 50 basis points in September 2024, 25 basis points in November 2024, and 25 basis points in December 2024 noting at the September meeting the reduction was due to the risks associated with both inflation and the labor market becoming more balanced given the effectiveness of restrictive monetary policy in combatting inflation. However, the Federal Reserve left rates unchanged at the most recent FOMC meetings in January and March 2025.

Q. What is the expected path of monetary policy over the near-term?

A. At the March 2025 FOMC meeting, Chairman Powell noted that labor market conditions are "solid" and while inflation has declined it still remains above the Federal Reserve's target of 2 percent, as a result, the FOMC decided to maintain the current federal fund rate range of 4.25 percent to 4.50 percent.[9] Regarding the possible path of monetary policy,

[8] S&P Capital IQ Pro.
[9] Transcript of Chair Powell's Press Conference, (January 29, 2025).

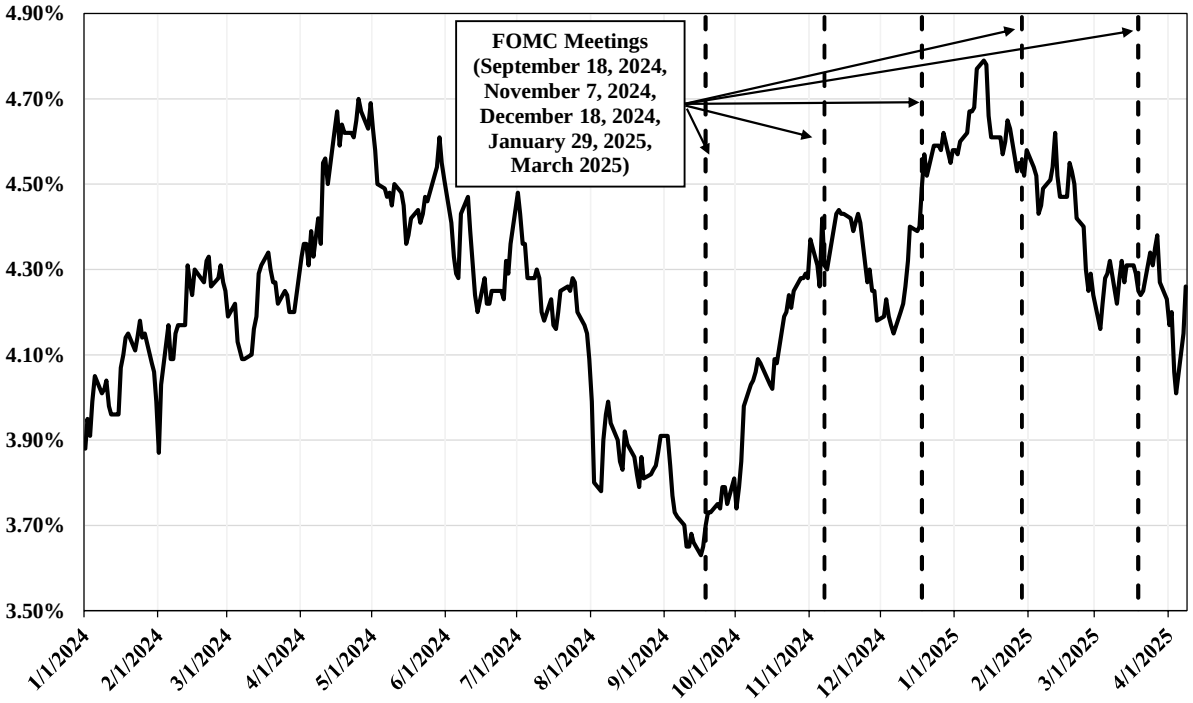
Chairman Powell continued to reiterate that policy is "not on any preset course"; but, he acknowledged increased uncertainly due to the implementation of significant policy changes (i.e., trade, immigration, fiscal policy and regulation) by the Trump administration.[10] Chairman Powell noted that the FOMC will continue to analyze incoming data to determine the effect of such policy changes and was in a good position to adjust the course of monetary policy if needed.[11] Thus, the FOMC's forecast of the federal funds rate remained unchanged from the December 2024 meeting, forecasting just two rate cuts before the end of 2025.[12]

Q. What has happened to the yields on long-term government bonds since the FOMC reduced the federal funds rate in September 2024?

A. As shown in Figure 3 below, while the yield on the 10-year treasury bond declined prior to the time of the first federal funds rate cut, the yield has increased since the September 2024 FOMC meeting. As of April 8, 2025, the 10-year Treasury bond yield was 4.26 percent, which is consistent with levels seen in June 2024, several months prior to the reductions in the federal funds rate.

[10] *Id.*
[11] *Id.*
[12] Federal Reserve, Summary of Economic Projections, March 19, 2025, at 2.

Figure 3: 10-Year Treasury Bond Yield, Janaury 2024 through April 8, 2025[13]



Q. Why have long-term interest rates increased since the Federal Reserve reduced the federal funds rate in September?

A. Investors view key elements of President Trump's economic plan, such as tax cuts, immigration policy, and tariffs, as inflationary. According to a recent *Reuters* article, the increase in long-term government bond yields was initially related to investors responding to an increasing probability of a Trump Administration in 2025 and has continued since President Trump's re-election and inauguration.[14] For example, on April 2, 2025, President Trump announced a significant set of tariffs on each of the U.S.'s trading partners, a policy initiative that is largely viewed as inflationary. Inflation affects bonds, in particular long-term government bonds, because it erodes the value of future bonds payments. Therefore, in an inflationary environment, investors will demand higher returns on bonds to

[13] *S&P Capital IQ Pro*.
[14] Davide Barbuscia and Lewis Krauskopf, "Bond rebound uncertain as Trump plans overshadow Fed rate cuts," *Reuters*, November 8, 2024.

compensate for the added risk of inflation thus bond prices decline and the yields on bonds increase. The longer the duration of the bond, the greater the effect of inflation which is why inflation risk is greater for long-term government bonds. The significant tariff policy increases the risk that inflation will remain elevated, which is why the yields on long-term bonds have not decreased and in fact have increased since the Federal Reserve reduced the federal funds rate. Further, the use of tariffs strains the relationship with trading partners, which could result in a reduction in the foreign demand for long-term U.S. government bonds resulting in additional upward pressure on long-term government bond yields.[15]

Q. What are expectations for the yields on long-term government bonds?

A. Economists and analysts are expecting elevated rates. *Blue Chip Financial Forecasts* provides a forecast from economists on the 30-year Treasury bond. In the most recent published *Blue Chip Financial Forecasts* report, economists projected the 30-year treasury rate to remain relatively stable and decrease only slightly from 4.60 percent in Q2/2025 to 4.50 percent in Q2/2026.[16] Additionally, the consensus estimate over the longer-term (i.e., 2026-2030) as published in the December 2024 *Blue Chip Financial Forecasts* report was 4.30 percent.[17] This is important because it means that long-term interest rates are expected to remain elevated during the period that the Company's rates will be in effect.

Q. What are your conclusions regarding the effect of current market conditions on the cost of equity for the Company?

A. It is important to consider current and projected market conditions in setting the forward-looking ROE due to its effect on the estimated cost of equity. Long-term interest rates

---

[15] Vanjani, Karishma. "U.S. Treasury Bonds Sell Off as 30-Year Yield Rises Most Since 1982," Barron's, April 9, 2025.

[16] *Blue Chip Financial Forecasts*, Vol. 44, No. 4, April 1, 2025, at 2.

[17] *Blue Chip Financial Forecasts*, Vol. 43, No. 12, November 27, 2024, at 14.

remain elevated and are expected to continue to remain elevated as a result of inflationary policies such as tariffs, immigration policy, and tax cuts. While the FOMC has most recently held the federal funds rate unchanged after three rate cuts, Chairman Powell has indicated that the Federal Reserve is in "wait and see mode" and will rely on incoming data to determine when it is appropriate to adjust the federal funds rate. With higher expected interest rates, borrowing is more expensive which in turn raises the cost of capital. As a result, investors demand higher returns on equity, leading to an increase in the cost of equity.

V. PROXY GROUP SELECTION

Q. Please provide a brief profile of KAWC.

A. KAWC, a wholly-owned subsidiary of AWK, provides water distribution service to approximately 140,000 customers in Kentucky.[18] The Company can access debt markets through American Water Capital Corp. ("AWCC") or independently. The current credit ratings for AWCC and AWK are as follows: (1) S&P - A (Outlook: Stable);[19] and (2) Moody's - Baa1 (Outlook: Stable).[20]

Q. Why have you used a group of proxy companies to estimate the cost of equity for KAWC?

A. In this proceeding, the cost of equity is being estimated for KAWC, a rate-regulated subsidiary of AWK. Because the cost of equity is a market-based concept and the Company does not make up the entirety of a publicly-traded entity, it is necessary to establish a group of companies that are both publicly traded and comparable to the

[18] Company provided data.
[19] S&P Global Ratings, American Water Works Co. Inc., February 6, 2023.
[20] Moody's Ratings, Credit Opinion, American Water Works Company, Inc., January 23, 2025.

Company in certain fundamental business and financial respects to serve as its "proxy" in the cost of equity estimation process. Accordingly, I have developed screens and screening criteria based on judgment with the intention of balancing the need to maintain a proxy group that is of sufficient size with the need to establish a proxy group of companies that are comparable in business and financial risk to KAWC.

Even if the Company was publicly traded, it is possible that transitory events could bias its market value over a given period. A significant benefit of using a proxy group is that it moderates the effects of unusual events that may be associated with any one company. The companies included in the proxy group all possess a set of operating and risk characteristics that are substantially comparable to the Company, and thus provide a reasonable basis to derive and estimate the appropriate cost of equity for the Company.

Q. How did you select the companies in your proxy group?

A. I began with the group of U.S. utilities that *Value Line* classifies as "Water Utilities" and "Natural Gas Distribution Companies" and applied screening criteria to select companies that:

- pay consistent quarterly cash dividends because companies that do not cannot be analyzed using the constant growth DCF model;
- have an investment grade long-term issuer rating;
- have positive long-term earnings growth forecasts from at least two equity analysts;
- derive more than 70.00 percent of their total operating income from regulated operations; and
- were not parties to a merger or transformative transaction during the analytical periods relied on.

Q. Did you consider any additional companies for inclusion in your proxy group?

A. Yes. I also considered the group of companies that *Value Line* classifies as "Electric Utilities." I started by relying on the criteria used to screen the water and natural gas utilities, and then applied the following two additional screening criteria to the group of electric utilities to ensure that any companies meeting the criteria would be considered risk comparable to KAWC:

- The company's owned generation comprises less than 10 percent of its total MWh sales to ultimate customers, which ensures that the electric utilities included did not own a substantial amount of generation and therefore had operations that were primarily transmission and distribution; and
- own water operations.

Q. Based on this screening criteria, are any companies classified by *Value Line* as electric utilities included in your proxy group?

A. No. While I have considered the electric companies for potential inclusion in the proxy group, none of the companies met the screening criteria that I specified.

Q. Did you include AWK in your proxy group?

A. No. It is not appropriate to include AWK in the proxy group used to determine the authorized ROE for KAWC because of the circular logic that would occur. For example, in the current proceeding, the ROE for KAWC is being determined, which in turn contributes to the ROE of its parent company, AWK. If AWK were included in the proxy group, AWK would be being used to determine its own subsidiary's ROE. Therefore, to avoid the circular logic, I have excluded AWK from my proxy group for KAWC.

Q. Why did you consider natural gas and electric distribution utilities for inclusion in the proxy group?

A. As a result of industry consolidation in the utility industry, *Value Line* currently classifies only seven companies as water utilities, meaning the universe of potential companies for inclusion in a proxy group is already small before any screening criteria are applied. Therefore, because there is a limited number of publicly traded water companies available for inclusion in a proxy group, I have also considered natural gas distribution companies and electric utilities that meet the screening criteria discussed.

Q. Are natural gas and electric distribution utilities reasonably comparable to water utilities to be included in a proxy group used to estimate the cost of equity for a water utility?

A. Yes, it is reasonable to consider both natural gas and electric distribution companies for purposes of establishing a proxy group of companies that are reasonably comparable to KAWC. KAWC is a regulated utility distribution company, which is similar to other regulated utility distribution companies that provide electric or natural gas service instead of water distribution. The screening criteria I have specified requires that a company derive more than 70 percent of its operating income from regulated operations. Therefore, the electric utilities and natural gas distribution companies included in my proxy group generate a large portion of their operating income from regulated operations similar to KAWC and the water utilities included in the proxy group.

Recent consolidation in the utility industry has demonstrated the similar nature of water, electric, and natural gas distribution utilities. Consolidation within the water utility industry has occurred not only among water-only utilities, there have also been acquisitions

that have involved the merger of a natural gas utility with a water utility and an electric utility with a water utility. For example, in 2017, Northwest Natural Gas Company ("Northwest Natural") acquired Salmon Valley Water Company and Falls Water Company, two water utilities operating in the Pacific Northwest, and one of the reasons cited for the merger was the similarity in operating characteristics and risk profiles of the natural gas and water utilities. In an interview regarding the transaction, the CEO of Northwest Natural noted:

> While these transactions and the companies' continuing operations are not expected to have a material impact on NW Natural's financial results, we view these acquisitions as the first step in a broader strategy. The water utility sector has a risk profile and business model that is similar to our core gas utility. There are also substantial investment opportunities over the long term, as water infrastructure needs to be replaced and upgraded to serve growing communities with safe, clean drinking water.[21]

Similarly, in 2020, Essential completed the acquisition of PNG Companies, LLC, a natural gas utility operating in Pennsylvania, West Virginia, and Kentucky. In discussing the acquisition, Essential's Chairman and CEO Chris Franklin noted that:

> …both gas and water utilities are underground utilities, and that the systems share a common burden of being old and in need of replacement. However, he said rates will not go up for "a number of years," and that any increase would require approval from the PUC.[22]

Q. Have other regulators also considered the inclusion of other utility industry segments in the proxy group used to estimate the cost of equity for a water utility?

A. Yes. The Massachusetts Department of Public Utilities ("MDPU"), the Florida Public Service Commission ("FPUC") and the Illinois Commerce Commission ("ICC") have

[21] Northwest Natural Gas Company, Press Release, "NW Natural Expands into Regulated Water Utility Sector with Acquisitions in Oregon and Idaho," December 21, 2017.

[22] Margaret J. Krauss, "Aqua America Will Buy Peoples Gas For $4.3 Billion," 90.5 WESA (NPR), January 16, 2020.

considered the results of a proxy group that includes natural gas companies when determining the authorized ROE for water utilities. For example:

- In Docket No. 17-90, the MDPU determined that the use of a natural gas utility proxy group was appropriate for the purpose of demonstrating the comparability of the investment risk of the proxy group to Aquarion Water Company.[23]

- In Docket No. 20180006-WS, the FPUC modified the methodology used to estimate the ROE for water and wastewater utilities in Florida to include a combined proxy group of natural gas and water utilities.[24] The FPUC has previously relied on a natural gas only proxy group to estimate the ROE for water and wastewater utilities;[25] however, to increase the size of the proxy group, the FPUC decided to rely on a combined proxy group. Specifically, the FPUC noted:

> The leverage formula methodology shall be modified to include a combined proxy group of natural gas and WAW utilities as proxy companies in calculating the leverage formula. We find that the selected natural gas utilities and WAW utilities that derive at least 50 percent of their revenue from regulated rates. These utilities have market power and are influenced significantly by economic regulation. In Attachment 1, the returns calculated using the proxy group are adjusted to reflect the risks faced by Florida WAW utilities. The updated index consists of five natural gas companies and seven WAW companies that derive at least 50 percent of their total revenue from regulated operations. These companies have a median Standard and Poor's bond rating of "A"[26]

- In Case No. 22-0210, for Illinois-American Water Company, the ICC agreed that a proxy group of water and public utility companies was a reasonable sample upon which to apply the various COE estimation models.[27]

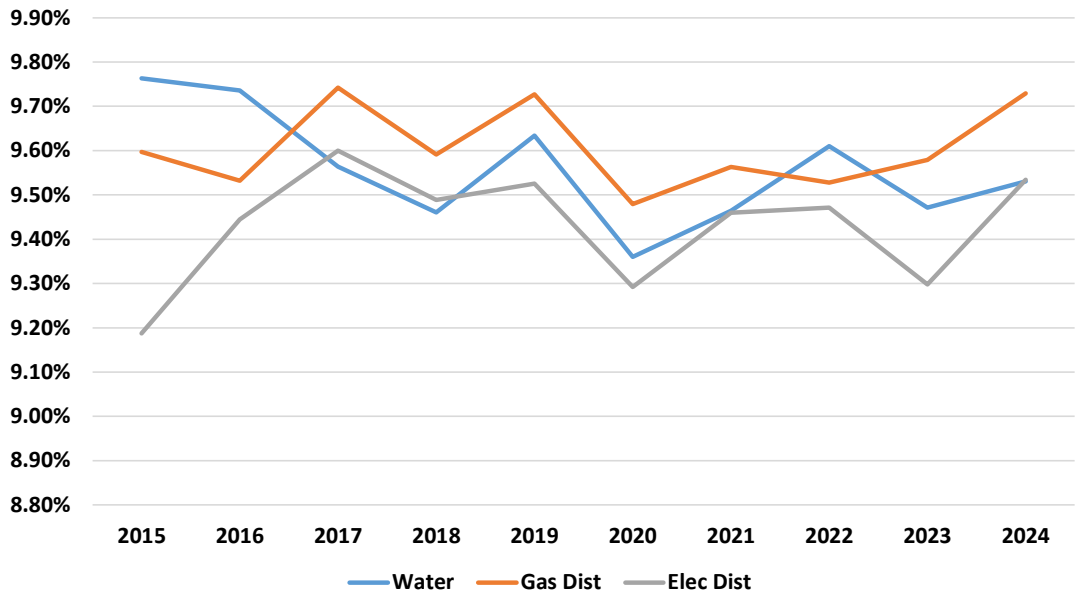
---

[23] Massachusetts Department of Public Utilities, Docket No. 17-90, October 31, 2018, at 286-287.
[24] Florida Public Service Commission, Docket No. 20180006-WS, Order No. PSC-2018-0327-PAA-WS, June 26, 2018, at 7.
[25] Florida Public Service Commission, Docket No. 170006-WS, Order No. PSC-17-0249-PAA-WS, June 26, 2017, at 2.
[26] Florida Public Service Commission, Docket No. 20180006-WS, Order No. PSC-2018-0327-PAA-WS, June 26, 2018, at 8.
[27] Illinois Commerce Commission, Docket No. 22-0210, Order, December 15, 2022, at 102.

Q. Is there additional information that indicates similarity between water utilities and electric and natural gas distribution utilities?

A. Yes. As shown in Figure 4, I have reviewed the average annual authorized ROEs separately for water, natural gas distribution, and electric distribution utilities over the past decade across the United States. As shown, over the past ten years, the historical annual average authorized ROEs for these types of utilities have varied relative to one another, which is indicative that these utilities are considered reasonably comparable to one another in terms of risk and thus are generally comparable to KAWC for purposes of developing a proxy group for purposes of estimating the cost of equity in this proceeding.

Figure 4: Comparison of Average Authorized ROEs Nationally for Water, Natural Gas Distribution, and Electric Distribution Utilities[28]



Q. What is the composition of your proxy group?

A. The screening criteria discussed, the details of which are presented on Exhibit AEB-2, results in a proxy group consisting of the companies shown in Figure 5.

[28] *S&P Capital IQ Pro.*

Figure 5: Proxy Group

Company	Ticker
Atmos Energy Corporation	ATO
NiSource Inc.	NI
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
Southwest Gas Corporation	SWX
Spire, Inc.	SR
American States Water Company	AWR
California Water Service Group	CWT
Middlesex Water Company	MSEX
SJW Group	SJW
Essential Utilities, Inc.	WTRG

VI. COST OF EQUITY ESTIMATION

Q. Please briefly discuss the ROE in the context of the regulated rate of return.

A. The rate of return for a regulated utility is the weighted average cost of capital, in which the costs of the individual sources of capital are weighted by their respective proportion (*i.e.*, book values) in the utility's capital structure. The ROE is the cost rate applied to the equity capital in calculating the rate of return. Although the costs of debt and preferred stock can be directly observed, the cost of equity is market-based and, therefore, must be estimated based on observable market data.

Q. How is the required cost of equity determined?

A. A range of the required cost of equity is estimated by using analytical techniques that rely on market-based data to quantify investor expectations regarding equity returns. Within that range, the ROE that is recommended is based on a review of the business, regulatory, and financial risks of the subject utility as compared with the proxy group, including the capital structure of the subject utility. A key consideration in determining the cost of equity is to ensure that the methodologies employed reasonably reflect investors' views of the financial markets in general, as well as the subject company (in the context of the proxy

group), in particular. It is also important that the ROE that is authorized takes into consideration the financial risk resulting from the authorized capital structure of the subject utility. An authorized capital structure that has a relatively greater amount of leverage results in relatively greater risk, because equity is the last claimant in the event of the dissolution of a company. Therefore, as the leverage in the capital structure increases, it is necessary for the ROE to increase to recognize the incremental risk to equity holders.

Q. What methods did you use to estimate KAWC's cost of equity?

A. I consider the results of the constant growth DCF model, the CAPM, and the ECAPM. As discussed in more detail below, a reasonable cost of equity estimate considers alternative methodologies, observable market data, and the reasonableness of their individual and collective results.

Q. Why is it important to use more than one analytical approach to estimate the cost of equity?

A. Because the cost of equity is not directly observable, it must be estimated based on both quantitative and qualitative information. When faced with the task of estimating the cost of equity, analysts and investors are inclined to gather and evaluate as much relevant data as reasonably can be analyzed. Several models have been developed to estimate the cost of equity, and I use multiple approaches to estimate the cost of equity. As a practical matter, however, all of the models available for estimating the cost of equity are subject to limiting assumptions or other methodological constraints. Consequently, many well-regarded finance texts recommend using multiple approaches when estimating the cost of equity.

For example, Copeland, Koller, and Murrin[29] suggest using the CAPM and Arbitrage Pricing Theory model, while Brigham and Gapenski[30] recommend the CAPM, DCF, and "bond yield plus risk premium" approaches.[31] Because the cost of equity models rely on different assumptions, it is appropriate to consider multiple models to ensure that changes in market conditions are properly reflected in the range of cost of equity results that are reasonably available for investors to consider.

Q. Has the Commission also relied on multiple models in establishing a utility's authorized ROE?

A. Yes. The Commission stated in the Company's last rate case that it considered all of the evidence presented in the case to determine the authorized ROE for KAWC. Specifically, the Commission stated:

> In evaluating the ROE for Kentucky-American, the Commission must evaluate and review each model and all parties' positions and balance the financial integrity of the utility with the interests of the consumer and the statutory obligation that rates be fair, just and reasonable. The Commission notes that in recent cases including Case Nos. 2020-00349/2020-00350, 2022-00147, 2022-00222, and 2022-00372 the Commission has discussed that it is appropriate for utilities to present, and for the Commission to evaluate, multiple methodologies to estimate ROEs, and each approach has its own strengths.[32]

[29] Tom Copeland, Tim Koller and Jack Murrin, *Valuation: Measuring and Managing the Value of Companies*, New York, McKinsey & Company, Inc., 3rd Ed., 2000, at 214.

[30] Eugene Brigham, Louis Gapenski, *Financial Management: Theory and Practice*, Orlando, Dryden Press, 1994, at 341.

[31] While it has historically been my practice to present the results of a bond yield plus risk premium approach in the context of estimating a reasonable cost of equity, I have not done so in this case to limit the number of contested issues.

[32] Case No. 2023-00191, *Electronic Application of Kentucky-American Water Company for an Adjustment of Rates, A Certificate of Public Convenience and Necessity for Installation of Advanced Metering Infrastructure, Approval of Regulatory and Accounting Treatments, and Tariff Revisions* (KY PSC May 3, 2023), Order at 36-37; footnotes omitted.

A. Constant Growth DCF Model

Q. Please describe the DCF approach.

A. The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its most general form, the DCF model is expressed as follows:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

Where P_0 represents the current stock price, D1…D∞ are all expected future dividends, and k is the discount rate, or required ROE. Equation [1] is a standard present value calculation that can be simplified and rearranged into the following form:

$$k = \frac{D_0(1+g)}{P_0} + g \quad [2]$$

Equation [2] is often referred to as the constant growth DCF model in which the first term is the expected dividend yield and the second term is the expected long-term growth rate.

Q. What assumptions are required for the constant growth DCF model?

A. The constant growth DCF model requires the following four assumptions: (1) a constant growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings ratio; and (4) a discount rate greater than the expected growth rate. To the extent that any of these assumptions are not objectively valid, considered judgment and/or specific adjustments should be applied to the results.

Q. What market data do you use to calculate the dividend yield in your constant growth DCF model?

A. The dividend yield in my constant growth DCF model is based on the current annualized dividend and average closing stock prices of the proxy group companies over the most recent 30, 90, and 180 trading days ended March 31, 2025.

Q. Why do you use three averaging periods for stock prices?

A. I use an average of recent trading days to calculate the term P_0 in the DCF model to reflect current market data, while also ensuring that the result of the model is not skewed by anomalous events that may affect stock prices on any given trading day.

Q. Do you make any adjustments to the dividend yield to account for periodic growth in dividends?

A. Yes. Since utility companies tend to increase their quarterly dividends at different times throughout the year, it is reasonable to assume that dividend increases will be evenly distributed over calendar quarters. Given that assumption, it is reasonable to apply one-half of the expected annual dividend growth rate for purposes of calculating the expected dividend yield component of the DCF model. This adjustment ensures that the expected first-year dividend yield is, on average, representative of the coming twelve-month period, and does not overstate the aggregated dividends to be paid during that time.

Q. Why is it important to select appropriate measures of long-term growth in applying the DCF model?

A. In its constant growth form, the DCF model (*i.e.*, Equation [2]) assumes a single growth estimate in perpetuity. To reduce the long-term growth rate to a single measure, one must assume that the payout ratio remains constant and that earnings per share ("EPS"),

dividends per share, and book value per share all grow at the same constant rate. Over the long run, however, dividend growth can only be sustained by earnings growth. Therefore, it is important to consider a variety of sources in arriving at a singular long-term earnings growth rate for the constant growth DCF model.

Q. Which sources of long-term earnings growth rates did you use?

A. My constant growth DCF model incorporates three sources of long-term earnings growth rates: (1) *Zacks Investment Research* ("*Zacks*"); (2) *S&P Capital IQ Pro*; and (3) *Value Line*.

Q. Have you previously relied on projected EPS growth rates provided by *Yahoo! Finance*?

A. Yes; however, *Yahoo! Finance* no longer reports consensus projected 3- to 5-year EPS growth rates. As a result, I now instead rely on the consensus projected 3- to 5-year EPS growth rates reported by *S&P Capital IQ Pro*.

Q. Why do you believe that projected earnings growth rates are the appropriate growth rates in the DCF model?

A. Earnings are the fundamental driver of a company's ability to pay dividends; therefore, projected EPS growth is the appropriate measure of a company's long-term growth. In contrast, changes in a company's dividend payments are based on management decisions related to cash management and other factors. For example, a company may decide to retain earnings rather than pay out a portion of those earnings to shareholders through dividends. Therefore, dividend growth rates are less likely than earnings growth rates to reflect accurately investor perceptions of a company's growth prospects.

Q. How do you calculate the range of results for the constant growth DCF model?

A. I calculate a low-end result for my DCF model using the minimum growth rate of the three sources (*i.e.*, the lowest of the *Zacks*, *S&P Capital IQ Pro*, and *Value Line* projected earnings growth rates) for each of the proxy group companies. I use a similar approach to calculate a high-end result, using the maximum growth rate of the three sources for each proxy group company. Lastly, I calculate the mean results using the average growth rate from all three sources for each proxy group company.

Q. Did you exclude any earnings growth rates from third party sources?

A. Yes. *S&P Capital IQ Pro* and Zacks each report the same projected EPS growth rate for American States Water Company ("AWR"), California Water Service Group ("CWT"), Middlesex Water Company ("MSEX"), and SJW Group ("SJW"). The respective projected EPS growth rates for AWR, CWT, MSEX and SJW are based on the estimate of one analyst. Therefore, to avoid placing two-thirds weight on the estimate of one analyst when calculating the average projected EPS growth rate for each company (*i.e.*, average of projected EPS growth rates from *Value Line*, Zacks and *S&P Capital IQ Pro*), I excluded the projected EPS growth rates reported by Zacks for AWR, SJW, MSEX and CWT.

Q. Why didn't you exclude the projected EPS growth rate from *S&P Capital IQ* of 42.44 percent for CWT which appears to be an outlier?

A. It is appropriate to remove an outlier if it is determined that the data point is the result of an error. While the projected EPS growth rate for CWT is higher than the range established for the other proxy companies, the growth rate is based on an analyst's projections and, therefore, does not appear to be the result of an error. Absent an error, there are other alternatives for addressing disparate data. One approach is to select a measure of central

tendency other than the mean, as I have done by relying on the median results for my constant growth DCF analysis. In general, the median is not affected to a large degree by the presence of outliers on both the high and low-end. In fact, as shown in Exhibit AEB-3, the median result for the proxy group does not change if the projected EPS growth rate for CWT is excluded from my constant growth DCF analysis.

Q. What are the results of your constant growth DCF analyses?

A. The results of my constant growth DCF analyses are presented in Exhibit AEB-3 and are summarized below in

A. Figure 6.

Figure 6: Summary of Constant Growth DCF Results

	Constant Growth DCF		
	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Median			
30-Day Avg. Stock Price	9.42%	10.63%	11.36%
90-Day Avg. Stock Price	9.51%	10.92%	11.46%
180-Day Avg. Stock Price	9.36%	11.17%	11.59%
Average	9.43%	10.91%	11.47%

B. CAPM and ECAPM Analysis

Q. Please briefly describe the CAPM.

A. The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium to compensate investors for the non-diversifiable or "systematic" risk of that security.[33] This second component is the product

[33] Systematic risk is the risk inherent in the entire market or market segment, which cannot be diversified away using a portfolio of assets. Unsystematic risk is the risk of a specific company that can, theoretically, be mitigated through portfolio diversification.

of the market risk premium and the beta coefficient, which measures the relative riskiness of the security being evaluated.

The CAPM is defined by four components, each of which must theoretically be a forward-looking estimate:

$$K_e = r_f + \beta(r_m - r_f) \qquad [3]$$

Where:

Ke = the required market COE;
β = beta coefficient of an individual security;
rf = the risk-free rate of return; and
rm = the required return on the market.

In this specification, the term ($r_m - r_f$) represents the market risk premium. According to the theory underlying the CAPM, because unsystematic risk can be diversified away, investors should only be concerned with systematic or non-diversifiable risk. Systematic risk is measured by beta, which is a measure of the volatility of a security as compared to the market as a whole. Beta is defined as:

$$\beta = \frac{Covariance(r_e, r_m)}{Variance(r_m)} \qquad [4]$$

Variance (r_m) represents the variance of the market return, which is a measure of the uncertainty of the general market. *Covariance* (r_e, r_m) represents the covariance between the return on a specific security and the general market, which reflects the extent to which the return on that security will respond to a given change in the general market return. Thus, beta represents the risk of the security relative to the general market.

Q. What risk-free rate do you use in your CAPM analysis?

A. I rely on three sources for my estimate of the risk-free rate: (1) the current 30-day average yield on 30-year U.S. Treasury bonds, which is 4.61 percent;[34] (2) the average projected 30-year U.S. Treasury bond yield for the third quarter of 2025 through the third quarter of 2026, which is 4.52 percent;[35] and (3) the average projected 30-year U.S. Treasury bond yield for 2026 through 2030, which is 4.30 percent.[36]

Q. What beta coefficients do you use in your CAPM analyses?

A. As shown in Exhibit AEB-4, I use the average beta coefficients for the proxy group companies as reported by *Bloomberg Professional* (*"Bloomberg")* and *Value Line*. I use the beta coefficients for the companies in the proxy groups reported by *Bloomberg Professional* (*"Bloomberg")* and *Value Line*. The beta coefficients reported by *Bloomberg* are calculated using ten years of weekly returns relative to the S&P 500 Index. The beta coefficients reported by *Value Line* are calculated based on five years of weekly returns relative to the New York Stock Exchange Composite Index. Additionally, as shown on Exhibit AEB-4 and Exhibit AEB-5, I also consider an additional CAPM analysis that relies on the long-term average beta coefficient reported by *Value Line* for the companies in my proxy group from 2013 through 2024.

Q. How do you estimate the market risk premium in the CAPM?

A. I estimate the market risk premium as the difference between the implied expected equity market return and the risk-free rate. As shown in Exhibit AEB-6, the expected market return is calculated using the constant growth DCF model discussed earlier in my testimony

---

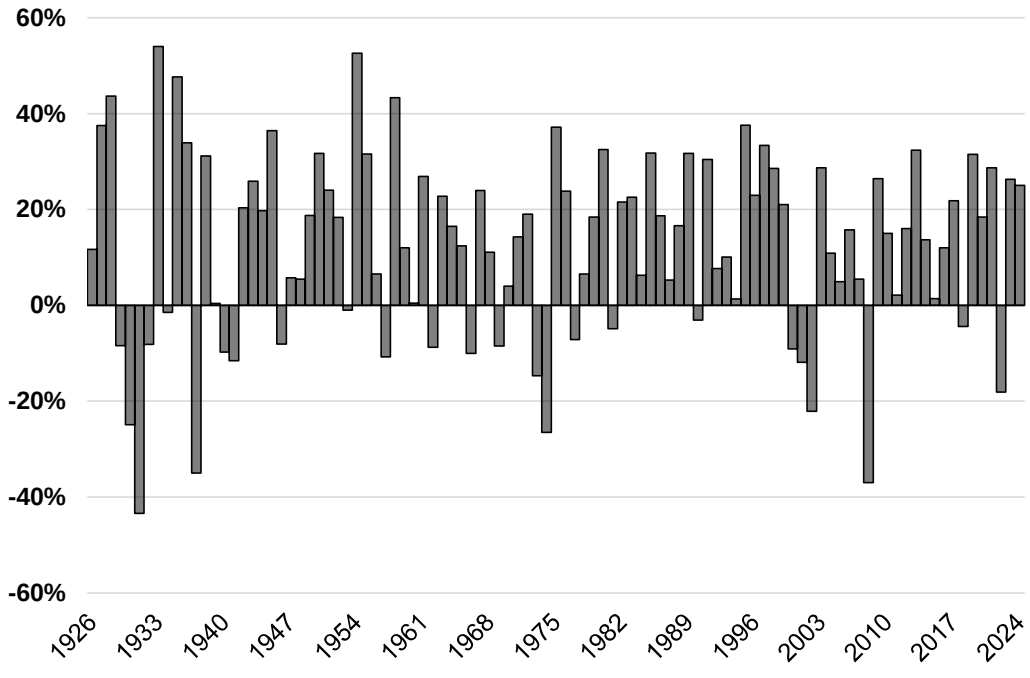
[34] *Bloomberg Professional*, as of March 31, 2025.
[35] *Blue Chip Financial Forecasts*, Vol. 44, No. 4, April 1, 2025, at 2.
[36] *Blue Chip Financial Forecasts*, Vol. 43, No. 12, November 27, 2024, at 14.

for the companies in the S&P 500 Index. Based on an estimated market capitalization-weighted dividend yield of 1.36 percent and a weighted long-term earnings growth rate of 11.15 percent, the estimated required market return for the S&P 500 Index as of March 31, 2025 is 12.58 percent. Based on the three risk-free rates considered, the implied market risk premia ranges from 7.97 percent to 8.28 percent.

Q. How does the current expected market return compare to observed historical market returns?

A. As shown in Figure 7, given the range of annual equity returns that have been observed over the past century, a current expected market return of 12.58 percent is not unreasonable. As shown, in 52 out of the past 99 years (or approximately 53.00 percent of the observations), the realized equity market return was at least 12.58 percent or greater.

Figure 7: Realized U.S. Equity Market Returns (1926-2024)[37]



[37] Depicts total annual returns on large company stocks, as reported in the 2023 *Kroll* SBBI Yearbook and by *S&P Capital IQ Pro*.

Q. Did you consider another form of the CAPM in your analysis?

A. Yes. I have also considered the results of an ECAPM in estimating the cost of equity for KAWC.[38] The ECAPM calculates the product of the adjusted beta coefficient and the market risk premium and applies a weight of 75.00 percent to that result. The model then applies a 25.00 percent weight to the market risk premium without any effect from the beta coefficient. The results of the two calculations are summed, along with the risk-free rate, to produce the ECAPM result, as noted in Equation [5] below:

$$k_e = r_f + 0.75\beta(r_m - r_f) + 0.25(r_m - r_f) \qquad [5]$$

Where:

k_e = the required market COE
β = Adjusted Beta coefficient of an individual security
r_f = the risk-free rate of return
r_m = the required return on the market as a whole

The empirical form of the CAPM addresses the tendency of the "traditional" CAPM to underestimate the cost of equity for companies with low beta coefficients such as regulated utilities. In that regard, the ECAPM is not redundant to the use of adjusted betas in the traditional CAPM; rather, it recognizes the results of academic research indicating that the risk-return relationship is different (in essence, flatter) than estimated by the CAPM, and that the CAPM underestimates the "alpha," or the constant return term.[39]

Consistent with my CAPM, my application of the ECAPM uses the same three yields on the 30-year Treasury bonds as the risk-free rate, forward-looking market risk premium estimate, and beta coefficients.

[38] *See, e.g.*, Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 189.
[39] *Id.*, at 191.

Q. What are the results of your CAPM analyses?

A. The results of my CAPM and ECAPM analyses are presented in Exhibit AEB-4 and are summarized below in Figure 8.

Figure 8: CAPM Results

CAPM and ECAPM

	30-Year Treasury Bond Yield		
	Current 30-Day Avg	Near-Term Projected	Longer-Term Projected
CAPM:			
Current *Value Line* Beta	11.57%	11.56%	11.53%
Current *Bloomberg* Beta	10.59%	10.57%	10.52%
Long-term Avg. *Value Line* Beta	10.65%	10.62%	10.57%
ECAPM:			
Current *Value Line* Beta	11.82%	11.81%	11.79%
Current *Bloomberg* Beta	11.09%	11.07%	11.03%
Long-term Avg. *Value Line* Beta	11.13%	11.11%	11.07%

VII. BUSINESS AND REGULATORY RISKS

Q. Do the results of the cost of equity analyses alone provide an appropriate estimate of the cost of equity for the Company?

A. No. The model results provide only a range for the appropriate estimate of the Company's cost of equity. Several additional factors must be considered when determining where the Company's cost of equity falls within the range of analytical results. These factors, which are discussed below, should be considered with respect to their overall effect on the Company's risk profile relative to the proxy group.

A. Capital Expenditures

Q. Please summarize the Company's projected capital expenditure requirements.

A. KAWC currently projects capital expenditures for 2025 through 2029 of approximately $468 million for its water utility operations, including significant investment to replace

aging infrastructure necessary to meet the needs of its customers and to comply with various regulations.[40]

Q. How do the Company's capital expenditure requirements compare to those of their respective proxy group companies?

A. As shown on Exhibit AEB-7, I have calculated the ratio of expected capital expenditures to net utility plant for the Company and each of the companies in the proxy group by dividing each company's projected capital expenditures for the period from 2025 through 2029 by its total net utility plant as of December 31, 2024. As shown, KAWC's ratio of capital expenditures as a percentage of net utility plant is slightly below the median for the companies in the proxy group.

Q. How is the Company's risk profile affected by its substantial capital expenditure requirements?

A. As with any utility faced with substantial capital expenditure requirements, the Company's risk profile may be adversely affected in two significant and related ways: (1) the heightened level of investment increases the risk of under-recovery or delayed recovery of the invested capital; and (2) an inadequate return would put downward pressure on key credit metrics.

Q. Do credit rating agencies recognize the risks associated with elevated levels of capital expenditures?

A. Yes. From a credit perspective, the additional pressure on cash flows associated with high levels of capital expenditures exerts corresponding pressure on credit metrics and,

[40] Data provided by KAWC.

therefore, credit ratings. To that point, S&P has explained the importance of regulatory support for large capital projects:

> When applicable, a jurisdiction's willingness to support large capital projects with cash during construction is an important aspect of our analysis. This is especially true when the project represents a major addition to rate base and entails long lead times and technological risks that make it susceptible to construction delays. Broad support for all capital spending is the most credit-sustaining. Support for only specific types of capital spending, such as specific environmental projects or system integrity plans, is less so, but still favorable for creditors. Allowance of a cash return on construction work-in-progress or similar ratemaking methods historically were extraordinary measures for use in unusual circumstances, but when construction costs are rising, cash flow support could be crucial to maintain credit quality through the spending program. Even more favorable are those jurisdictions that present an opportunity for a higher return on capital projects as an incentive to investors.[41]

Recently, S&P evaluated the capital expenditure trends in the utility sector, noting that the balance between operating with negative discretionary cash flow from operations offset by reliable access to capital markets for financing may be tested through ever-increasing capital expenditure requirements as a result of the transformation of the energy sector through the focus on low/no carbon generation, investments to harden the system against physical risk and climate events, and the replacement of aging infrastructure:

> Some companies have been unable to support financial metrics consistent with former ratings as their discretionary cash flow deteriorated. This trend was a significant contributor to the sector seeing the median rating decline to 'BBB+' from 'A-' for the first time in 2022. What is less clear is whether or not management teams will take steps to forestall another step down in credit quality as high capital outlays persist. So far in 2023, we have not seen evidence that equity issuance is keeping pace with debt issuance to fill ever-deepening discretionary cash flow shortfalls, but time will tell.
>
> …..
>
> Despite the improvement in the economic outlook, we expect inflation, high interest rates, higher capital spending, and the strategic decision by many companies to operate with only minimal financial cushion from their downgrade thresholds to continue to pressure the industry's credit quality.

[41] S&P Global Ratings, "Assessing U.S. Investor-Owned Utility Regulatory Environments," August 10, 2016, at 7.

> We are cautious about the durability of the current stable ratings outlook given persistently high capital spending that now supports a trend of deterioration in discretionary cash flow. Without a commensurate focus on balance sheet preservation through equity support of discretionary cash flow deficits, limited financial cushions could give rise to another round of negative rating actions. The question then comes back to management priorities and financial policy decisions, or utilities may be faced with another step down in the median ratings.[42]

Therefore, to the extent that the Company's rates do not permit the opportunity to recover its capital investments on a regular and timely basis, it will face increased recovery risk and thus increased pressure on its credit metrics.

Q. Does KAWC have a mechanism for timely recovery of infrastructure replacements?

A. Yes. KAWC has a Qualified Infrastructure Program ("QIP") surcharge that provides the Company an opportunity to recover costs associated with replacing some limited aging infrastructure. The recovery of costs through the QIP surcharge are established on an annual basis and recover limited qualified plant additions for the upcoming year. The QIP surcharge does not include recovery of the costs of expansion projects. Although the QIP surcharge is positive in terms of timeliness of cost recovery for KAWC, such surcharges have become quite commonplace in utility regulation across the United States. As shown in Exhibit AEB-8, approximately 75 percent of the operating utilities of the companies in the proxy group also have some form of infrastructure replacement recovery mechanisms. Consequently, the presence of the QIP surcharge for KAWC does not reduce the Company's risk vis-à-vis that of the proxy group.

[42] S&P Global Ratings, "Record CapEx Fuels Growth Along With Credit Risk For North American Investor-Owned Utilities," September 12, 2023, at 5, 7-8.

Q. What are your conclusions regarding the effect of KAWC's capital spending program on its risk profile and cost of capital?

A. The Company's capital expenditure requirements as a percentage of net utility plant are significant and KAWC is projected to need to continue its substantial capital investments over at least the next five years. Similar to the vast majority the operating utilities of the proxy group, KAWC has a mechanism to recover a limited portion of the Company's projected capital expenditures; however, it is important to recognize that the size of the Company's proposed capital additions, much of which is not recoverable though the mechanism, imposes financial strains and risks on the Company.

B. Regulatory Risks

Q. How does the regulatory environment affect investors' risk assessments?

A. The ratemaking process is premised on the principle that, for investors and companies to commit the capital needed to provide safe and reliable utility service, the subject utility must have the opportunity to recover the return of, and the market-required return on, invested capital. Regulatory commissions recognize that because utility operations are capital intensive, regulatory decisions should enable the utility to attract capital at reasonable terms, and doing so balances the long-term interests of investors and customers. To achieve this balance, the Company must be able to finance its operations assuming a reasonable opportunity to earn an appropriate return on invested capital to maintain an acceptable financial profile. In that respect, the regulatory environment is one of the most important factors considered in both debt and equity investors' risk assessments.

From the perspective of debt investors, the authorized return should enable the utility to generate the cash flow needed to meet its near-term financial obligations, make

the capital investments needed to maintain and expand its systems, and maintain the necessary levels of liquidity to fund unexpected events. This financial liquidity must be derived not only from internally-generated funds, but also by efficient access to capital markets. Moreover, because fixed income investors have many investment alternatives, even within a given market sector, the utility's financial profile must be adequate on a relative basis to ensure its ability to attract capital under a variety of economic and financial market conditions.

Equity investors require that the authorized return be adequate to provide a risk-comparable return on the equity portion of the utility's capital investments. Because equity investors are the residual claimants on the utility's cash flows (which is to say that the equity return is subordinate to interest payments), they are particularly concerned with the strength of regulatory support and its effect on future cash flows.

Q. Do credit rating agencies consider regulatory risk in establishing a company's credit rating?

A. Yes. Both S&P and Moody's consider the overall regulatory framework in establishing credit ratings. Moody's establishes credit ratings based on four key factors: (1) business profile; (2) financial policy; (3) leverage and coverage; and (4) uplift for structural considerations. Within the business profile criteria, stability and predictability of regulatory environment and cost and investment recovery (sufficiency and timeliness) are each given a broad rating factor of 15.00 percent, while revenue risk is given a rating factor of 5.00 percent. Therefore, Moody's assigns regulatory risk a 35.00 percent weighting in the overall assessment of business and financial risk for regulated utilities.[43]

[43] Moody's Investors Service, Rating Methodology: Regulated Water Utilities, August 18, 2023, at 3.

S&P also identifies the regulatory framework as an important factor in credit ratings for regulated utilities, stating: "we assess regulatory advantage because the influence of the regulatory framework and regime is of critical importance. It defines the environment in which a utility operates and has a significant bearing on a utility's financial performance."[44] S&P identifies four specific factors that it uses to assess the credit implications of the regulatory jurisdictions of investor-owned regulated utilities: (1) regulatory stability; (2) tariff-setting procedures and design; (3) financial stability; and (4) regulatory independence and insulation.[45]

Q. How does the regulatory environment in which a utility operates affect its access to and cost of capital?

A. The regulatory environment can significantly affect both the access to, and cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory environment. As noted by Moody's, "the characteristics and transparency of the concession(s) and regulations under which the utility operates, the track record of the regulatory regime in setting tariffs and applying regulations consistently are core aspects of the overall stability of a water utility's business profile."[46]

[44] Standard & Poor's Global Ratings, "Sector-Specific Corporate Methodology," April 4, 2024, at 147.
[45] *Id.*
[46] Moody's Investors Service, Rating Methodology: Regulated Water Utilities, August 18, 2023, at 9.

Q. Have you conducted any analysis of the risk associated with the regulatory framework in Kentucky relative to the jurisdictions in which the utility operating subsidiaries of the companies in your proxy group operate?

A. Yes. I have evaluated the regulatory framework in Kentucky on three factors that are important in terms of providing a regulated utility a reasonable opportunity to earn its authorized ROE: (1) test year convention (*i.e.*, use of a forecast vs. historical test year); (2) the use of revenue decoupling mechanisms or other clauses that provide revenue stabilization; and (3) the prevalence of capital cost recovery between rate cases. The results of this regulatory risk assessment are shown in Exhibit AEB-8 and are summarized as follows:

1. Test Year Convention: KAWC is proposing to rely on a fully forecasted test year for the period ending December 31, 2026. Approximately 61 percent of the operating utilities of the proxy group companies provide service in jurisdictions that use a fully or partially forecast test year. Forecasted test years have been relied on for several years and produce cost estimates that are more reflective of future costs which results in more accurate recovery of incurred costs and mitigates the regulatory lag associated with historical test years.

2. Revenue Stabilization / Volumetric Risk: KAWC does not currently have protection against volumetric risk in Kentucky. However, approximately 61 percent of the operating companies held by the proxy group have some form of protection against volumetric risk through either decoupling, formula-based rates, and/or straight-fixed variable rate design that allow them to break the link between customer usage and revenues.

3. Capital Cost Recovery: As discussed, KAWC has the QIP surcharge that provides for recovery of a limited portion of the Company's capital investment costs. This is consistent with the proxy group, as 75.00 percent of the operating utilities of the proxy group companies have some form of capital cost recovery

mechanism in place.

Q. What is the effect on KAWC of having relatively few timely cost recovery mechanisms?

A. The lack of timely cost recovery mechanisms can result in regulatory lag. Regulatory lag occurs when a regulated utility is not able to recover its just and reasonable costs of providing service to customers on a timely basis. Regulatory lag is reflected in a utility's financial performance through earnings attrition, which is the inability of the utility to earn its authorized ROE due to delays in the recovery of allowable costs that have been incurred to provide regulated service to customers.

Q. Is there evidence that KAWC has been unable to earn its authorized return on equity?

A. Yes. As shown in Figure 9, the Company has not earned its authorized ROE for the past seven years, and particularly in the past two years, has substantially underearned its authorized ROE. As seen, on average, the Company has underearned its authorized ROE by 115 basis points over this period.

Figure 9: KAWC Earned v. Authorized ROE[47]

	Earned ROE	Authorized ROE	Difference
2018	9.40%	9.70%	-0.30%
2019	9.09%	9.70%	-0.61%
2020	9.04%	9.70%	-0.66%
2021	9.10%	9.70%	-0.60%
2022	9.56%	9.70%	-0.14%
2023	6.64%	9.70%	-3.06%
2024	7.07%	9.70%	-2.63%
Average	**8.55%**	**9.70%**	**-1.15%**

[47] Provided by the Company.

Q. What are your conclusions regarding the perceived risks related to the Kentucky regulatory environment?

A. As discussed, both Moody's and S&P have identified the supportiveness of the regulatory environment as an important consideration in developing their overall credit ratings for regulated utilities. Considering the regulatory adjustment mechanisms of the Company relative to the proxy group, many of the companies in the proxy group have more timely cost recovery between rate proceedings than KAWC has in Kentucky. In addition, the Company has significantly under-earned its authorized ROE in each of the last seven years. As a result, I conclude that the Company has greater than average regulatory risk when compared to the proxy group.

C. Flotation Costs

Q. What are flotation costs?

A. Flotation costs are the costs associated with the sale of new issues of common stock. These costs include out-of-pocket expenditures for preparation, filing, underwriting, and other issuance costs.

Q. Why is it important to consider flotation costs in the allowed ROE?

A. A regulated utility must have the opportunity to earn an ROE that is both competitive and compensatory to attract and retain new investors. To the extent that a company is denied the opportunity to recover prudently incurred flotation costs, actual returns will fall short of expected (or required) returns, thereby diluting equity share value.

Q. Are flotation costs part of the utility's invested costs or part of the utility's expenses?

A. Flotation costs are part of the invested costs of the utility, which are properly reflected on the balance sheet under "paid in capital." They are not current expenses, and, therefore,

are not reflected on the income statement. Rather, like investments in rate base or the issuance costs of long-term debt, flotation costs are incurred over time. As a result, the great majority of a utility's flotation cost is incurred prior to the test year but remains part of the cost structure that exists during the test year and beyond, and as such, should be recognized for ratemaking purposes. Therefore, it is irrelevant whether an issuance occurs during the test year or is planned for the test year because failure to allow recovery of past flotation costs may deny KAWC the opportunity to earn its required rate of return in the future.

Q. Please provide an example of why a flotation cost adjustment is necessary to compensate investors for the capital they have invested.

A. As shown in Exhibit AEB-9, the offering price in AWK's 2023 stock issuance was $135.5 per share of common stock. After paying flotation costs associated with the equity issuance, which include fees paid to underwriters and attorneys, among others, AWK's net proceeds were only $133.41 per share invested. The net proceeds (*i.e.*, $133.41 per share) can then be invested in plant used to serve its customers, which becomes part of rate base on which a return can be earned. Absent a flotation cost adjustment, the investor will thereafter earn a return on only the rate base funded by the proceeds from the $133.41 per share issued, even though their equity contribution was $135.50 per share of common stock. Therefore, making a small flotation cost adjustment in establishing the authorized ROE would provide the investor a reasonable opportunity to earn the authorized return, rather than the lower return that results when the authorized return is applied to an amount less than what the investor contributed.

Q. Is the need to consider flotation costs eliminated because KAWC is a wholly-owned subsidiary of AWK?

A. No. Although KAWC is a wholly-owned subsidiary of AWK, it is appropriate to consider flotation costs because wholly-owned subsidiaries receive equity capital from their parent and provide returns on the capital that roll up to the parent, which is designated to attract and raise capital based upon the returns of those subsidiaries. To deny recovery of issuance costs associated with the capital that is invested in the subsidiaries ultimately penalizes the investors that fund the utility operations and could inhibit the utility's ability to obtain new equity capital at a reasonable cost. This is important for KAWC because, as I have previously discussed, the Company is planning significant capital expenditures in the near term.

Q. Is the need to consider flotation costs recognized by the academic and financial communities?

A. Yes. The need to reimburse shareholders for the lost returns associated with equity issuance costs is recognized by the academic and financial communities in the same spirit that investors are reimbursed for the costs of issuing debt. This treatment is consistent with the philosophy of a fair rate of return. According to Dr. Shannon Pratt:

> Flotation costs occur when new issues of stock or debt are sold to the public. The firm usually incurs several kinds of flotation or transaction costs, which reduce the actual proceeds received by the firm. Some of these are direct out-of-pocket outlays, such as fees paid to underwriters, legal expenses, and prospectus preparation costs. Because of this reduction in proceeds, the firm's required returns on these proceeds equate to a higher return to compensate for the additional costs. Flotation costs can be accounted for either by amortizing the cost, thus reducing the cash flow to discount, or by incorporating the cost into the cost of capital. Because flotation costs are

not typically applied to operating cash flow, one must incorporate them into the cost of capital.[48]

Q. Has the Commission previously addressed the consideration of flotation costs in establishing the authorized ROE for a utility?

A. Yes. For example, in its decision in the Company's last rate proceeding, the Commission reiterated that "it continues to reject the use of flotation cost adjustments," in addition to other specific adjustments.[49] While I recognize that the Commission made this determination in the last case, the Company has recently issued equity and incurred a flotation cost as a result, and thus for the various reasons discussed, is a reasonable cost for the Commission to consider in establishing the authorized ROE for KAWC in this proceeding.

Q. How did you calculate the flotation costs for KAWC?

A. My flotation cost calculation is based on the costs incurred by AWK in its most recent equity offering on March 3, 2023. That flotation cost percentage is then applied to the DCF analysis to estimate impact of the flotation cost on the cost of equity. As shown in Exhibit AEB-9, based on the flotation costs incurred in the most recent AWK issuance, the impact on the cost of equity is approximately 7 basis points (*i.e.*, 0.07 percent) based on the median results of the proxy group.

Q. Do your final cost of equity results include an adjustment for flotation cost recovery?

A. No. While the final cost of equity results do not incorporate an explicit adjustment for flotation costs, the estimated effect of flotation cost on the cost of equity is considered in

---

[48] Shannon P. Pratt, *Cost of Capital Estimation and Applications*, Second Edition, at 220-221.

[49] Case No. 2023-00191, *Electronic Application of Kentucky-American Water Company for an Adjustment of Rates, A Certificate of Public Convenience and Necessity for Installation of Advanced Metering Infrastructure, Approval of Regulatory and Accounting Treatments, and Tariff Revisions* (KY PSC May 3, 2023), Order at 38.

identifying a recommended ROE within the range of cost of equity estimates from the various models.

VIII. CAPITAL STRUCTURE

Q. Is the capital structure of the Company an important consideration in the determination of the appropriate ROE?

A. Yes. It is a fundamental tenet of finance that the greater the amount of financial risk borne by common shareholders, the greater the return required by shareholders in order to be compensated for the added financial risk imparted by the greater use of senior debt financing. In other words, assuming all else equal, the greater the debt ratio, the greater the risk to equity investors, and thus the greater the return required by equity investors. This is because the claim of equity holders on the cash flows of the Company is secondary to debt holders, meaning the greater the debt service requirement, the less cash flow is available for common equity holders.

In this proceeding, a proxy group of comparable companies is being used to determine the Company's ROE. The returns that are required by investors for the proxy companies take into consideration the risk related to the capitalization of those companies. Thus, to the extent that the capital structure authorized for the Company was to deviate significantly from the range established by the proxy group used to determine the ROE, that risk difference must be reflected in the equity return

Q. What is the KAWC's proposed capital structure?

A. KAWC is proposing a ratemaking capital structure composed of 52.26 percent common equity, 46.10 percent long-term debt, 1.31 percent short-term debt and 0.33 percent

preferred stock, representing the 13-month average for the forecast period ending December 31, 2026.

Q. Have you conducted any analysis to determine whether the Company's proposed equity ratio is reasonable?

A. Yes, I have reviewed the Company's proposed capital structure as compared with the actual capital structures of the operating utilities of the proxy group companies for the most recent three years.

Q. Why is it appropriate to consider the equity ratio for the proxy companies?

A. The determination of the cost of equity and ultimately the authorized ROE is based on the expected return for a proxy group of companies that are comparable in risk to KAWC. The equity ratio is a measure of the financial risk of the company, and the authorized ROE is the return to compensate investors for that risk. If the Commission is going to rely on the cost of equity estimates for the proxy companies to establish the authorized ROE for KAWC, it is important that the financial risk of KAWC be similar to the financial risk of the proxy group. This is accomplished when the equity ratio of the subject company (in this case KAWC) is within the range established by the proxy group.

Q. What is the result of your analysis of the proxy group capital structures?

A. As shown on Exhibit AEB-10, the common equity ratio for the operating subsidiaries of the proxy group companies over the past three years ranged from 45.22 percent to 60.03 percent, with an average of 52.77 percent. Thus, KAWC's proposed equity ratio of 52.26 percent is well within the equity ratio range established by the utility operating subsidiaries of the proxy group, and in fact, below the average equity ratio of the proxy group.

Q. Are there other factors to be considered in setting the Company's capital structure?

A. Yes, there are other factors that should be considered in setting the Company's capital structure, namely the challenges that the credit rating agencies have highlighted as placing pressure on the credit metrics for utilities.

For example, Moody's recently maintained its "stable" 2025 outlook for the regulated gas and electric utilities sector on the expectation of continued regulatory support, which includes supportive legislature, timely recovery of excess purchased power costs, and weather-related cost recovery. Moody's "stable" rating also considers its expectation for declining interest rates and inflation, as well as favorable natural gas prices. Moody's makes clear that constructive regulatory outcomes that promote timely cost recovery is the key factor in supporting utility credit quality.[50]

S&P continues to maintain a negative outlook for the utility industry, noting that downgrades have outpaced upgrades for the fifth consecutive year and the most common investor-owned utility credit rating is a "BBB+".[51] S&P expects the industry to have increased cash flow deficits as a result of significant capital spending.[52] Weak common equity issuance contributes pressure to the industry's financial health. The utility industry will need ongoing access to capital markets to fund the capital expenditures. Furthermore, S&P also notes that there is a significant increase physical risk due to climate change and elevated wildfire risk.

Fitch Ratings ("Fitch") has a "neutral" outlook for the utility industry noting that

---

[50] Moody's Investors Service, Outlook. "Outlook Stable; regulatory support, economic factors offset financial pressure." November 7, 2024.

[51] S&P Global Ratings. Industry Credit Outlook 2025, "North American Regulated Utilities: Capex and climate change pressure credit quality." January 14, 2025.

[52] *Id.*

moderation in inflation and "subdued" commodity costs have eased pressures on customer bills. However, Fitch cautions that utility capital expenditures are expected to grow at a "double-digit rate" and thus, rate case outcomes will be key to watch as regulators balance rate requests and customer bill pressures.[53]

The credit ratings agencies' continued concerns over increased capital expenditures underscore the importance of maintaining adequate cash flow metrics for the Company in the context of this proceeding.

Q. Will the capital structure and ROE authorized in these proceedings affect the Company's access to capital at reasonable rates?

A. Yes. The level of earnings authorized by the Commission directly affects the Company's ability to fund its operations with internally-generated funds. Both bond investors and rating agencies expect a significant portion of ongoing capital investments to be financed with internally-generated funds. In addition, it is important to recognize that because a utility's investment horizon is very long, investors require the assurance of a sufficiently high return to satisfy the long-term financing requirements of the assets placed into service. Those assurances, which often are measured by the relationship between internally generated cash flows and debt (or interest expense), depend quite heavily on the capital structure. As a consequence, both the ROE and capital structure are very important to debt and equity investors, particularly given the capital market conditions discussed previously

[53] Fitch Ratings, "North American Utilities, Power & Gas Outlook 2025," December 5, 2024, at 1.

IX. CONCLUSION AND RECOMMENDATIONS

Q. What is your conclusion regarding a reasonable and appropriate ROE for KAWC?

A. Figure 10 summarizes the results of my cost of equity analyses. Based on the quantitative and qualitative analyses presented in my direct testimony, and the business and financial risks of the Company as compared to the proxy group, a reasonable range for KAWC's ROE in this proceeding is from 10.25 percent to 11.25 percent, and within that range, an ROE of 10.75 percent reasonably reflects the investor-required return.

Figure 10: Summary of Analytical Results

Constant Growth DCF

	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Median			
30-Day Avg. Stock Price	9.42%	10.63%	11.36%
90-Day Avg. Stock Price	9.51%	10.92%	11.46%
180-Day Avg. Stock Price	9.36%	11.17%	11.59%
Average	9.43%	10.91%	11.47%

CAPM and ECAPM

	30-Year Treasury Bond Yield		
	Current 30-Day Avg	Near-Term Projected	Longer-Term Projected
CAPM:			
Current *Value Line* Beta	11.57%	11.56%	11.53%
Current *Bloomberg* Beta	10.59%	10.57%	10.52%
Long-term Avg. *Value Line* Beta	10.65%	10.62%	10.57%
ECAPM:			
Current *Value Line* Beta	11.82%	11.81%	11.79%
Current *Bloomberg* Beta	11.09%	11.07%	11.03%
Long-term Avg. *Value Line* Beta	11.13%	11.11%	11.07%

Q. What is your conclusion regarding KAWC's proposed capital structure?

A. Based on the actual capital structures of the operating utilities of the proxy group companies, KAWC's proposed common equity ratio of 52.26 percent is reasonable. The proposed equity ratio is well within the range, and moderately below the mean, established by the capital structures of the utility operating subsidiaries of the proxy companies.

Q. Does this conclude your direct testimony?

A. Yes, it does.

VERIFICATION

COMMONWEALTH OF MASSACHUSETTS)
) SS:
COUNTY OF SUFFOLK)

The undersigned, Ann E. Bulkley, being duly sworn, deposes and says that she is a Principal at The Brattle Group, that she has personal knowledge of the matters set forth in the accompanying testimony for which she is identified as the responsible witness, and that the answers contained therein are true and correct to the best of her information, knowledge and belief.

Ann E. Bulkley

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 6th day of May, 202.

Notary Public

My Commission Expires:
6/30/2028

Gerard M. Rooney
NOTARY PUBLIC
Commonwealth of
Massachusetts
My Commission Expires
6/30/2028

GERARD M. ROONEY NOTARY PUBLIC COMMONWEALTH OF MASSACHUSETTS MY COMMISSION EXPIRES 6/30/2028

Ann E. Bulkley

PRINCIPAL

Boston | 508.981.0866 | Ann.Bulkley@brattle.com

With more than 25 years of experience in the energy industry, Ms. Bulkley specializes in regulatory economics for the electric and natural gas and water utility sectors, including valuation of regulated and unregulated utility assets, cost of capital, and capital structure issues.

Ms. Bulkley has extensive state and federal regulatory experience, and she has provided expert testimony on the cost of capital in nearly 100 regulatory proceedings before 32 state regulatory commissions and the Federal Energy Regulatory Commission (FERC).

In addition to her regulatory experience, Ms. Bulkley has provided valuation and appraisal services for a variety of purposes, including the sale or acquisition of utility assets, regulated ratemaking, ad valorem tax disputes, and other litigation purposes. In addition, she has experience in the areas of contract and business unit valuation, strategic alliances, market restructuring, and regulatory and litigation support.

Ms. Bulkley is a Certified General Appraiser licensed in the Commonwealth of Massachusetts and the State of New Hampshire.

Prior to joining Brattle, Ms. Bulkley was a Senior Vice President at an economic consultancy and held senior positions at several other consulting firms.

AREAS OF EXPERTISE

- Regulatory Economics, Finance & Rates
- Regulatory Investigations & Enforcement
- Tax Controversy & Transfer Pricing
- Electricity Litigation & Regulatory Disputes
- M&A Litigation

EDUCATION

- **Boston University**
  MA in Economics
- **Simmons College**
  BA in Economics and Finance

PROFESSIONAL EXPERIENCE

- **The Brattle Group (2022–Present)**
  Principal
- **Concentric Energy Advisors, Inc. (2002–2021)**
  Senior Vice President
  Vice President
  Assistant Vice President
  Project Manager
- **Navigant Consulting, Inc. (1997–2002)**
  Project Manager
- **Reed Consulting Group (1995-1997)**
  Consultant- Project Manager
- **Cahners Publishing Company (1995)**
  Economist

SELECTED CONSULTING EXPERIENCE & EXPERT TESTIMONY

REGULATORY ANALYSIS AND RATEMAKING

Have provided a range of advisory services relating to regulatory policy analysis and many aspects of utility ratemaking, with specific services including:

- Cost of capital and return on equity testimony, cost of service and rate design analysis and testimony, development of ratemaking strategies
- Development of merchant function exit strategies

- Analysis and program development to address residual energy supply and/or provider of last resort obligations
- Stranded costs assessment and recovery
  Performance-based ratemaking analysis and design
- Many aspects of traditional utility ratemaking (e.g., rate design, rate base valuation)

COST OF CAPITAL

Have provided expert testimony on the cost of capital and capital structure in nearly 100 regulatory proceedings before state and federal regulatory commissions in the United States.

RATEMAKING

Have assisted several clients with analysis to support investor-owned and municipal utility clients in the preparation of rate cases. Sample engagements include:

- Assisted several investor-owned and municipal clients on cost allocation and rate design issues including the development of expert testimony supporting recommended rate alternatives.
- Worked with Canadian regulatory staff to establish filing requirements for a rate review of a newly regulated electric utility. Along with analyzing and evaluating rate application, attended hearings and conducted investigation of rate application for regulatory staff and prepared, supported, and defended recommendations for revenue requirements and rates for the company. Additionally, developed rates for gas utility for transportation program and ancillary services.

VALUATION

Have provided valuation services to utility clients, unregulated generators, and private equity clients for a variety of purposes, including ratemaking, fair value, ad valorem tax, litigation and damages, and acquisition. Appraisal practices are consistent with the national standards established by the Uniform Standards of Professional Appraisal Practice.

Representative projects/clients have included:

- Prepared appraisals of electric utility transmission and distribution assets for ad valorem tax purposes.
- Prepared appraisals of hydroelectric generating facilities for ad valorem tax purposes.
- Conducted appraisals of fossil fuel generating facilities for ad valorem tax purposes.
- Conducted appraisals of generating assets for the purposes of unwinding sale-leaseback agreements.
- For a confidential utility client, prepared valuation of fossil and nuclear generation assets for financing purposes for regulated utility client.

- Conducted a strategic review of the acquisition of nuclear generation assets. Review included the evaluation of the operating costs of the facilities and the long-term liabilities associated with the assets including the decommissioning of the assets.
- Prepared a valuation of a portfolio of generation assets for a large energy utility to be used for strategic planning purposes. Valuation approach included an income approach, a real options analysis, and a risk analysis.
- Assisted clients in the restructuring of NUG contracts through the valuation of the underlying assets. Performed analysis to determine the option value of a plant in a competitively priced electricity market following the settlement of the NUG contract.
- Prepared market valuations of several purchase power contracts for large electric utilities in the sale of purchase power contracts. Assignment included an assessment of the regional power market, analysis of the underlying purchase power contracts, and a traditional discounted cash flow valuation approach, as well as a risk analysis. Analyzed bids from potential acquirers using income and risk analysis approached. Prepared an assessment of the credit issues and value at risk for the selling utility.
- Prepared appraisal of a portfolio of generating facilities for a large electric utility to be used for financing purposes.
- Conducted a valuation of regulated utility assets for the fair value rate base estimate used in electric rate proceedings in Indiana.
- Prepared an appraisal of a fleet of fossil generating assets for a large electric utility to establish the value of assets transferred from utility property.
- Conducted due diligence on an electric transmission and distribution system as part of a buy-side due diligence team.
- Provided analytical support and prepared testimony regarding the valuation of electric distribution system assets in five communities in a condemnation proceeding.
- Prepared feasibility reports analyzing the expected net benefits resulting from municipal ownership of investor-owned utility operations.
- Prepared independent analyses of proposal for the proposed government condemnation of the investor-owned utilities in Maine and the formation of a public power district.
- Valued purchase power agreements in the transfer of assets to a deregulated electric market.

STRATEGIC AND FINANCIAL ADVISORY SERVICES

Have assisted several clients across North America with analytically-based strategic planning, due diligence, and financial advisory services.

Representative projects include:

- Preparation of feasibility studies for bond issuances for municipal and district steam clients.
- Assisted in the development of a generation strategy for an electric utility. Analyzed various NERC regions to identify potential market entry points. Evaluated potential competitors and alliance partners. Assisted in the development of gas and electric price forecasts. Developed a framework for the implementation of a risk management program.
- Assisted clients in identifying potential joint venture opportunities and alliance partners. Contacted interviewed and evaluated potential alliance candidates based on company-established criteria for several LDCs and marketing companies. Worked with several LDCs and unregulated marketing companies to establish alliances to enter into the retail energy market. Prepared testimony in support of several merger cases and participated in the regulatory process to obtain approval for these mergers.
- Assisted clients in several buy-side due diligence efforts, providing regulatory insight and developing valuation recommendations for acquisitions of both electric and gas properties.

BULKLEY TESTIMONY LISTING

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Arizona Corporation Commission				
UNS Gas	11/24	UNS Gas	Docket No. G-04204A-24-0237	Return on Equity
Southwest Gas Corporation	02/24	Southwest Gas Corporation	Docket No. G-01551A-23-0341	Return on Equity
UNS Electric	11/22	UNS Electric	Docket No. E-04204A-15-0251	Return on Equity
Tucson Electric Power Company	6/22	Tucson Electric Power Company	Docket No. G-01933A-22-0107	Return on Equity
Southwest Gas Corporation	12/21	Southwest Gas Corporation	Docket No. G-01551A-21-0368	Return on Equity
Arizona Public Service Company	10/19	Arizona Public Service Company	Docket No. E-01345A-19-0236	Return on Equity
Tucson Electric Power Company	04/19	Tucson Electric Power Company	Docket No. E-01933A-19-0028	Return on Equity
Tucson Electric Power Company	11/15	Tucson Electric Power Company	Docket No. E-01933A-15-0322	Return on Equity
UNS Electric	05/15	UNS Electric	Docket No. E-04204A-15-0142	Return on Equity
UNS Electric	12/12	UNS Electric	Docket No. E-04204A-12-0504	Return on Equity
Arkansas Public Service Commission				
Oklahoma Gas and Electric Co	10/21	Oklahoma Gas and Electric Co	Docket No. D-18-046-FR	Return on Equity
Arkansas Oklahoma Gas Corporation	10/13	Arkansas Oklahoma Gas Corporation	Docket No. 13-078-U	Return on Equity
California Public Utilities Commission				
PacifiCorp, d/b/a Pacific Power	5/22	PacifiCorp, d/b/a Pacific Power	Docket No. A-22-05-006	Return on Equity
San Jose Water Company	05/21	San Jose Water Company	A2105004	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Colorado Public Utilities Commission				
Public Service Company of Colorado	01/24	Public Service Company of Colorado	Docket No. 24AL-___G	Return on Equity
Public Service Company of Colorado	11/22	Public Service Company of Colorado	Docket No. 22AL-0530E	Return on Equity
Public Service Company of Colorado	01/22	Public Service Company of Colorado	Docket No. 22AL-0046G	Return on Equity
Public Service Company of Colorado	07/21	Public Service Company of Colorado	21AL-0317E	Return on Equity
Public Service Company of Colorado	02/20	Public Service Company of Colorado	20AL-0049G	Return on Equity
Public Service Company of Colorado	05/19	Public Service Company of Colorado	19AL-0268E	Return on Equity
Public Service Company of Colorado	01/19	Public Service Company of Colorado	19AL-0063ST	Return on Equity
Atmos Energy Corporation	05/15	Atmos Energy Corporation	Docket No. 15AL-0299G	Return on Equity
Atmos Energy Corporation	04/14	Atmos Energy Corporation	Docket No. 14AL-0300G	Return on Equity
Atmos Energy Corporation	05/13	Atmos Energy Corporation	Docket No. 13AL-0496G	Return on Equity
Connecticut Public Utilities Regulatory Authority				
United Illuminating	11/12/24	United Illuminating	Docket No. 24-10-04	Return on Equity
The Southern Connecticut Gas Company	11/23	The Southern Connecticut Gas Company	Docket No. 23-11-02	Return on Equity
Connecticut Natural Gas Corporation	11/23	Connecticut Natural Gas Corporation	Docket No. 23-11-02	Return on Equity
Connecticut Water Company	10/23	Connecticut Water Company	Docket No. 23-08-32	Return on Equity
United Illuminating	09/22	United Illuminating	Docket No. 22-08-08	Return on Equity
United Illuminating	05/21	United Illuminating	Docket No. 17-12-03RE11	Return on Equity
Connecticut Water Company	01/21	Connecticut Water Company	Docket No. 20-12-30	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Connecticut Natural Gas Corporation	06/18	Connecticut Natural Gas Corporation	Docket No. 18-05-16	Return on Equity
Yankee Gas Services Co. d/b/a Eversource Energy	06/18	Yankee Gas Services Co. d/b/a Eversource Energy	Docket No. 18-05-10	Return on Equity
The Southern Connecticut Gas Company	06/17	The Southern Connecticut Gas Company	Docket No. 17-05-42	Return on Equity
The United Illuminating Company	07/16	The United Illuminating Company	Docket No. 16-06-04	Return on Equity
Federal Energy Regulatory Commission				
Sea Robin Pipeline	12/22	Sea Robin Pipeline	Docket No. RP22-___	Return on Equity
Northern Natural Gas Company	07/22	Northern Natural Gas Company	Docket No. RP22-___	Return on Equity
Transwestern Pipeline Company, LLC	07/22	Transwestern Pipeline Company, LLC	Docket No. RP22-___	Return on Equity
Florida Gas Transmission	02/21	Florida Gas Transmission	Docket No. RP21-441	Return on Equity
TransCanyon	01/21	TransCanyon	Docket No. ER21-1065	Return on Equity
Duke Energy	12/20	Duke Energy	Docket No. EL21-9-000	Return on Equity
Wisconsin Electric Power Company	08/20	Wisconsin Electric Power Company	Docket No. EL20-57-000	Return on Equity
Panhandle Eastern Pipe Line Company, LP	10/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-78-000 RP19-78-001	Return on Equity
Panhandle Eastern Pipe Line Company, LP	08/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-1523	Return on Equity
Sea Robin Pipeline Company LLC	11/18	Sea Robin Pipeline Company LLC	Docket# RP19-352-000	Return on Equity
Tallgrass Interstate Gas Transmission	10/15	Tallgrass Interstate Gas Transmission	RP16-137	Return on Equity
Idaho Public Utilities Commission				
PacifiCorp d/b/a Rocky Mountain Power	05/24	PacifiCorp d/b/a Rocky Mountain Power	Case No. PAC-E-24-04	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
PacifiCorp d/b/a Rocky Mountain Power	05/21	PacifiCorp d/b/a Rocky Mountain Power	Case No. PAC-E-24-04	Return on Equity
Intermountain Gas Co	12/22	Intermountain Gas Co	C-INT-G-22-07	Return on Equity
PacifiCorp d/b/a Rocky Mountain Power	05/21	PacifiCorp d/b/a Rocky Mountain Power	Case No. PAC-E-21-07	Return on Equity
Illinois Commerce Commission				
Illinois American Water	01/24	Illinois American Water	Docket No. 24-0097	Return on Equity
Peoples Gas Light & Coke Company	01/23	Peoples Gas Light & Coke Company	D-23-0069	Return on Equity
North Shore Gas Company	01/23	North Shore Gas Company	D-23-0068	Return on Equity
Illinois American Water	02/22	Illinois American Water	Docket No. 22-0210	Return on Equity
North Shore Gas Company	02/21	North Shore Gas Company	No. 20-0810	Return on Equity
Indiana Utility Regulatory Commission				
Ohio Valley Gas Corporation and Ohio Valley Gas, Inc.	02/24	Ohio Valley Gas Corporation and Ohio Valley Gas, Inc.	Cause No. 46011	Return on Equity
Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South	12/23	Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South	IURC Cause No. 45990	Return on Equity
Indiana Michigan Power Co.	08/23	Indiana Michigan Power Co.	IURC Cause No. 45933	Return on Equity
Indiana American Water Company	03/23	Indiana and Michigan American Water Company	IURC Cause No. 45870	Return on Equity
Indiana Michigan Power Co.	07/21	Indiana Michigan Power Co.	IURC Cause No. 45576	Return on Equity
Indiana Gas Company Inc.	12/20	Indiana Gas Company Inc.	IURC Cause No. 45468	Return on Equity
Southern Indiana Gas and Electric Company	10/20	Southern Indiana Gas and Electric Company	IURC Cause No. 45447	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Indiana and Michigan American Water Company	09/18	Indiana and Michigan American Water Company	IURC Cause No. 45142	Return on Equity
Indianapolis Power and Light Company	12/17	Indianapolis Power and Light Company	Cause No. 45029	Fair Value
Northern Indiana Public Service Company	09/17	Northern Indiana Public Service Company	Cause No. 44988	Fair Value
Indianapolis Power and Light Company	12/16	Indianapolis Power and Light Company	Cause No.44893	Fair Value
Northern Indiana Public Service Company	10/15	Northern Indiana Public Service Company	Cause No. 44688	Fair Value
Indianapolis Power and Light Company	09/15	Indianapolis Power and Light Company	Cause No. 44576 Cause No. 44602	Fair Value
Kokomo Gas and Fuel Company	09/10	Kokomo Gas and Fuel Company	Cause No. 43942	Fair Value
Northern Indiana Fuel and Light Company, Inc.	09/10	Northern Indiana Fuel and Light Company, Inc.	Cause No. 43943	Fair Value
Iowa Department of Commerce Utilities Board				
Iowa-American Water Company	04/24	Iowa-American Water Company	Docket No. RPU-2024-000_	Return on Equity
MidAmerican Energy Company	06/23	MidAmerican Energy Company	Docket No. RPU-2023-___	Return on Equity
MidAmerican Energy Company	01/22	MidAmerican Energy Company	Docket No. RPU-2022-0001	Return on Equity
Iowa-American Water Company	08/20	Iowa-American Water Company	Docket No. RPU-2020-0001	Return on Equity
Kansas Corporation Commission				
Evergy Kansas	04/23	Evergy Kansas	Docket No. 23-EKCE-775-RTS	Return on Equity
Atmos Energy Corporation	08/15	Atmos Energy Corporation	Docket No. 16-ATMG-079-RTS	Return on Equity
Kentucky Public Service Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Kentucky American Water Company	06/23	Kentucky American Water Company	Docket No. 2023-____	Return on Equity
Kentucky American Water Company	11/18	Kentucky American Water Company	Docket No. 2018-00358	Return on Equity
Maine Public Utilities Commission				
Central Maine Power	08/22	Central Maine Power	Docket No. 2022-00152	Return on Equity
Central Maine Power	10/18	Central Maine Power	Docket No. 2018-194	Return on Equity
Maryland Public Service Commission				
Maryland American Water Company	06/18	Maryland American Water Company	Case No. 9487	Return on Equity
Massachusetts Appellate Tax Board				
Hopkinton LNG Corporation	03/20	Hopkinton LNG Corporation	Docket No.	Valuation of LNG Facility
FirstLight Hydro Generating Company	06/17	FirstLight Hydro Generating Company	Docket No. F-325471 Docket No. F-325472 Docket No. F-325473 Docket No. F-325474	Valuation of Electric Generation Assets
Massachusetts Department of Public Utilities				
Massachusetts Electric Company Nantucket Electric Company d/b/a National Grid	11/23	Massachusetts Electric Company Nantucket Electric Company d/b/a National Grid	DPU 23-150	Return on Equity
National Grid USA	11/20	Boston Gas Company	DPU 20-120	Return on Equity
Berkshire Gas Company	05/18	Berkshire Gas Company	DPU 18-40	Return on Equity
Unitil Corporation	01/04	Fitchburg Gas and Electric	DTE 03-52	Integrated Resource Plan; Gas Demand Forecast
Michigan Public Service Commission				
Consumers Energy	12/16/24	Consumers Energy	C-U-21806	Return on Equity
Upper Michigan Energy Resources Corporation	05/24	Upper Michigan Energy Resources Corporation	Case No. U-21541	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Michigan Gas Utilities Corporation	03/24	Michigan Gas Utilities Corporation	Case No. U-21540	Return on Equity
Indiana Michigan Power Co.	09/23	Indiana Michigan Power Co.	Case No. U-21461	Return on Equity
Michigan Gas Utilities Corporation	03/23	Michigan Gas Utilities Corporation	Case No. U-21366	Return on Equity
Michigan Gas Utilities Corporation	03/21	Michigan Gas Utilities Corporation	Case No. U-20718	Return on Equity
Wisconsin Electric Power Company	12/11	Wisconsin Electric Power Company	Case No. U-16830	Return on Equity
Michigan Tax Tribunal				
New Covert Generating Co., LLC.	03/18	The Township of New Covert Michigan	MTT Docket No. 000248TT and 16-001888-TT	Valuation of Electric Generation Assets
Covert Township	07/14	New Covert Generating Co., LLC.	Docket No. 399578	Valuation of Electric Generation Assets
Minnesota Public Utilities Commission				
ALLETE, Inc. d/b/a Minnesota Power	11/23	Allete, Inc. d/b/a Minnesota Power	D-E-015/GR-23-155	Return on Equity
CenterPoint Energy Resources	11/23	CenterPoint Energy Resources	D-G-008/GR-23-173	Return on Equity
Minnesota Energy Resources Corporation	11/22	Minnesota Energy Resources Corporation	Docket No. G011/GR-22-504	Return on Equity
CenterPoint Energy Resources	11/21	CenterPoint Energy Resources	D-G-008/GR-21-435	Return on Equity
ALLETE, Inc. d/b/a Minnesota Power	11/21	Allete, Inc. d/b/a Minnesota Power	D-E-015/GR-21-630	Return on Equity
Otter Tail Power Company	11/20	Otter Tail Power Company	E017/GR-20-719	Return on Equity
ALLETE, Inc. d/b/a Minnesota Power	11/19	Allete, Inc. d/b/a Minnesota Power	E015/GR-19-442	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	10/19	CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	G-008/GR-19-524	Return on Equity
Great Plains Natural Gas Co.	09/19	Great Plains Natural Gas Co.	Docket No. G004/GR-19-511	Return on Equity
Minnesota Energy Resources Corporation	10/17	Minnesota Energy Resources Corporation	Docket No. G011/GR-17-563	Return on Equity
Missouri Public Service Commission				
Ameren Missouri	09/24	Ameren Missouri	File No. GR-2024-0369	Return on Equity
Missouri American Water Company	07/24	Missouri American Water Company	WR-2024-0320	Return on Equity
Ameren Missouri	06/24	Ameren Missouri	File No. ER-2024-0319	Return on Equity
Evergy Missouri West	02/24	Evergy Missouri West	File No. ER-2024-0189	Return on Equity
Ameren Missouri	08/22	Ameren Missouri	File No. ER-2022-0337	Return on Equity
Missouri American Water Company	07/22	Missouri American Water Company	Case No. WR-2022-0303 Case No. SR-2022-0304	Return on Equity
Evergy Missouri West	01/22	Evergy Missouri West	File No. ER-2022-0130	Return on Equity
Evergy Missouri Metro	01/22	Evergy Missouri Metro	File No. ER-2022-0129	Return on Equity
Ameren Missouri	03/21	Ameren Missouri	Docket No. ER-2021-0240 Docket No. GR-2021-0241	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Missouri American Water Company	06/20	Missouri American Water Company	Case No. WR-2020-0344 Case No. SR-2020-0345	Return on Equity
Missouri American Water Company	06/17	Missouri American Water Company	Case No. WR-17-0285 Case No. SR-17-0286	Return on Equity
Montana Public Service Commission				
Montana-Dakota Utilities Co.	7/24	Montana-Dakota Utilities Co.	D2024-05-061	Return on Equity
Montana-Dakota Utilities Co.	11/22	Montana-Dakota Utilities Co.	D2022.11.099	Return on Equity
Montana-Dakota Utilities Co.	06/20	Montana-Dakota Utilities Co.	D2020.06.076	Return on Equity
Montana-Dakota Utilities Co.	09/18	Montana-Dakota Utilities Co.	D2018.9.60	Return on Equity
Public Utilities Commission of Nevada				
Nevada Power Company d/b/a NV Energy	02/25	Nevada Power Company d/b/a NV Energy	25-02016	Return on Equity
Sierra Pacific Power Company d/b/a NV Energy	02/24	Sierra Pacific Power Company d/b/a NV Energy	24-02026	Return on Equity
Nevada Power Company d/b/a NV Energy	06/23	Nevada Power Company d/b/a NV Energy	23-06007	Return on Equity
Nevada Power Company d/b/a NV Energy	03/23	Nevada Power Company d/b/a NV Energy	22-03028	Merger benefits
New Hampshire - Board of Tax and Land Appeals				
Public Service Company of New Hampshire d/b/a Eversource Energy	11/19 12/19	Public Service Company of New Hampshire d/b/a Eversource Energy	Master Docket No. 28873-14-15-16-17PT	Valuation of Utility Property and Generating Assets
New Hampshire Public Utilities Commission				
Liberty Utilities (EnergyNorth Natural Gas)	07/23	Liberty Utilities (EnergyNorth Natural Gas)	Docket No. DG 23-067	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Liberty Utilities (Granite State Electric)	05/23	Liberty Utilities (Granite State Electric)	Docket No. DE 23-039	Return on Equity
Public Service Company of New Hampshire	05/19	Public Service Company of New Hampshire	DE-19-057	Return on Equity
New Hampshire-Merrimack County Superior Court				
Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE	04/18	Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE	220-2012-CV-1100	Valuation of Utility Property
New Hampshire-Rockingham Superior Court				
Eversource Energy	05/18	Public Service Commission of New Hampshire	218-2016-CV-00899 218-2017-CV-00917	Valuation of Utility Property
New Jersey Board of Public Utilities				
New Jersey American Water Company, Inc.	02/24	New Jersey American Water Company, Inc.	WR2401056	Return on Equity
Elizabethtown Gas Company	2/24	Elizabethtown Gas Company	GR24020158	Return on Equity
Public Service Electric and Gas Company	12/23	Public Service Electric and Gas Company	ER23120924 GR23120925	Return on Equity
New Jersey American Water Company, Inc.	01/22	New Jersey American Water Company, Inc.	WR22010019	Return on Equity
Public Service Electric and Gas Company	10/20	Public Service Electric and Gas Company	EO18101115	Return on Equity
New Jersey American Water Company, Inc.	12/19	New Jersey American Water Company, Inc.	WR19121516	Return on Equity
Public Service Electric and Gas Company	04/19	Public Service Electric and Gas Company	EO18060629 GO18060630	Return on Equity
Public Service Electric and Gas Company	02/18	Public Service Electric and Gas Company	GR17070776	Return on Equity
Public Service Electric and Gas Company	01/18	Public Service Electric and Gas Company	ER18010029 GR18010030	Return on Equity
New Mexico Public Regulation Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Southwestern Public Service Company	07/19	Southwestern Public Service Company	19-00170-UT	Return on Equity
Southwestern Public Service Company	10/17	Southwestern Public Service Company	Case No. 17-00255-UT	Return on Equity
Southwestern Public Service Company	12/16	Southwestern Public Service Company	Case No. 16-00269-UT	Return on Equity
Southwestern Public Service Company	10/15	Southwestern Public Service Company	Case No. 15-00296-UT	Return on Equity
Southwestern Public Service Company	06/15	Southwestern Public Service Company	Case No. 15-00139-UT	Return on Equity
New York State Department of Public Service				
Liberty Utilities (New York Water)	5/23	Liberty Utilities (New York Water)	Case 23-W-0235	Return on Equity
New York State Electric and Gas Company Rochester Gas and Electric	05/22	New York State Electric and Gas Company Rochester Gas and Electric	22-E-0317 22-G-0318 22-E-0319 22-G-0320	Return on Equity
Corning Natural Gas Corporation	07/21	Corning Natural Gas Corporation	Case No. 21-G-0394	Return on Equity
Central Hudson Gas and Electric Corporation	08/20	Central Hudson Gas and Electric Corporation	Electric 20-E-0428 Gas 20-G-0429	Return on Equity
Niagara Mohawk Power Corporation	07/20	National Grid USA	Case No. 20-E-0380 20-G-0381	Return on Equity
Corning Natural Gas Corporation	02/20	Corning Natural Gas Corporation	Case No. 20-G-0101	Return on Equity
New York State Electric and Gas Company Rochester Gas and Electric	05/19	New York State Electric and Gas Company Rochester Gas and Electric	19-E-0378 19-G-0379 19-E-0380 19-G-0381	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Brooklyn Union Gas Company d/b/a National Grid NY KeySpan Gas East Corporation d/b/a National Grid	04/19	Brooklyn Union Gas Company d/b/a National Grid NY KeySpan Gas East Corporation d/b/a National Grid	19-G-0309 19-G-0310	Return on Equity
Central Hudson Gas and Electric Corporation	07/17	Central Hudson Gas and Electric Corporation	Electric 17-E-0459 Gas 17-G-0460	Return on Equity
Niagara Mohawk Power Corporation	04/17	National Grid USA	Case No. 17-E-0238 17-G-0239	Return on Equity
Corning Natural Gas Corporation	06/16	Corning Natural Gas Corporation	Case No. 16-G-0369	Return on Equity
National Fuel Gas Company	04/16	National Fuel Gas Company	Case No. 16-G-0257	Return on Equity
KeySpan Energy Delivery	01/16	KeySpan Energy Delivery	Case No. 15-G-0058 Case No. 15-G-0059	Return on Equity
New York State Electric and Gas Company Rochester Gas and Electric	05/15	New York State Electric and Gas Company Rochester Gas and Electric	Case No. 15-E-0283 Case No. 15-G-0284 Case No. 15-E-0285 Case No. 15-G-0286	Return on Equity
North Dakota Public Service Commission				
Otter Tail Power Company	11/23	Otter Tail Power Company	Case No. PU-23-___	Return on Equity
Montana-Dakota Utilities Co.	11/23	Montana-Dakota Utilities Co.	Case No. PU-23-___	Return on Equity
Montana-Dakota Utilities Co.	05/22	Montana-Dakota Utilities Co.	C-PU-22-194	Return on Equity
Montana-Dakota Utilities Co.	08/20	Montana-Dakota Utilities Co.	C-PU-20-379	Return on Equity
Northern States Power Company	12/12	Northern States Power Company	C-PU-12-813	Return on Equity
Northern States Power Company	12/10	Northern States Power Company	C-PU-10-657	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Oklahoma Corporation Commission				
Oklahoma Gas & Electric	12/23	Oklahoma Gas & Electric	Cause No. PUD2023-000087	Return on Equity
Oklahoma Gas & Electric	12/21	Oklahoma Gas & Electric	Cause No. PUD 202100164	Return on Equity
Arkansas Oklahoma Gas Corporation	01/13	Arkansas Oklahoma Gas Corporation	Cause No. PUD 201200236	Return on Equity
Oregon Public Service Commission				
PacifiCorp d/b/a Pacific Power & Light	02/24	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-433	Return on Equity
PacifiCorp d/b/a Pacific Power & Light	03/22	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-399	Return on Equity
PacifiCorp d/b/a Pacific Power & Light	02/20	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-374	Return on Equity
Pennsylvania Public Utility Commission				
American Water Works Company Inc.	11/23	Pennsylvania-American Water Company	Docket No. R-2023-3043189 (water) Docket No. R-2023-3043190 (wastewater)	Return on Equity
American Water Works Company Inc.	04/22	Pennsylvania-American Water Company	Docket No. R-2020-3031672 (water) Docket No. R-2020-3031673 (wastewater)	Return on Equity
American Water Works Company Inc.	04/20	Pennsylvania-American Water Company	Docket No. R-2020-3019369 (water) Docket No. R-2020-3019371 (wastewater)	Return on Equity
American Water Works Company Inc.	04/17	Pennsylvania-American Water Company	Docket No. R-2017-2595853	Return on Equity
South Dakota Public Utilities Commission				
MidAmerican Energy Company	05/22	MidAmerican Energy Company	D-NG22-005	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Northern States Power Company	06/14	Northern States Power Company	Docket No. EL14-058	Return on Equity
Tennessee Public Utility Commission				
Tennessee American Water Company	04/24	Tennessee American Water Company	Docket No.24-00032	Return on Equity
Texas Public Utility Commission				
Electric Transmission Texas LLC	02/25	Electric Transmission Texas LLC	Docket No. 57518	Return on Equity
CenterPoint Energy Houston	03/24	CenterPoint Energy Houston	D-56211	Return on Equity
AEP Texas	02/24	AEP Texas	D-56165	Return on Equity
Entergy Texas, Inc.	07/22	Entergy Texas, Inc.	D-53719	Return on Equity
Southwestern Public Service Commission	08/19	Southwestern Public Service Commission	Docket No. D-49831	Return on Equity
Southwestern Public Service Company	01/14	Southwestern Public Service Company	Docket No. 42004	Return on Equity
Texas Railroad Commission				
CenterPoint Energy Entex and CenterPoint Energy Texas Gas	10/23	CenterPoint Energy Entex and CenterPoint Energy Texas Gas	2023 Texas Division Rate Case Case No. OS-23-00015513	Return on Equity
Utah Public Service Commission				
PacifiCorp d/b/a Rocky Mountain Power	06/24	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 24-035-04	Return on Equity
PacifiCorp d/b/a Rocky Mountain Power	05/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20-035-04	Return on Equity
Virginia State Corporation Commission				
Virginia American Water Company, Inc.	11/23	Virginia American Water Company, Inc.	Docket No. PUR-2023-00194	Return on Equity
Virginia American Water Company, Inc.	11/21	Virginia American Water Company, Inc.	Docket No. PUR-2021-00255	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Virginia American Water Company, Inc.	11/18	Virginia American Water Company, Inc.	Docket No. PUR-2018-00175	Return on Equity
Washington Utilities Transportation Commission				
Cascade Natural Gas Corporation	03/24	Cascade Natural Gas Corporation	Docket No. UG-240008	Return on Equity
Puget Sound Energy Inc.	02/24	Puget Sound Energy Inc.	Docket No. UE-240004 UG-240005	Return on Equity
PacifiCorp d/b/a Pacific Power & Light	03/23	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-230172	Return on Equity
Cascade Natural Gas Corporation	06/20	Cascade Natural Gas Corporation	Docket No. UG-200568	Return on Equity
PacifiCorp d/b/a Pacific Power & Light	12/19	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-191024	Return on Equity
Cascade Natural Gas Corporation	04/19	Cascade Natural Gas Corporation	Docket No. UG-190210	Return on Equity
West Virginia Public Service Commission				
West Virginia American Water Company	05/23	West Virginia American Water Company	Case No. 23-0383-W-42T	Return on Equity
West Virginia American Water Company	04/21	West Virginia American Water Company	Case No. 21-02369-W-42T	Return on Equity
West Virginia American Water Company	04/18	West Virginia American Water Company	Case No. 18-0573-W-42T Case No. 18-0576-S-42T	Return on Equity
Wisconsin Public Service Commission				
Wisconsin Power and Light	04/24	Wisconsin Power and Light	Docket No. 6680-UR-128	Return on Equity
Wisconsin Electric Power Company and Wisconsin Gas LLC	04/24	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR-111	Return on Equity
Wisconsin Power and Light	05/23	Wisconsin Power and Light	Docket No. 6680-UR-124	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Wisconsin Electric Power Company and Wisconsin Gas LLC	04/22	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR-110	Return on Equity
Wisconsin Public Service Corp.	04/22	Wisconsin Public Service Corp.	6690-UR-127	Return on Equity
Alliant Energy		Alliant Energy		Return on Equity
Wisconsin Electric Power Company and Wisconsin Gas LLC	03/19	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR-109	Return on Equity
Wisconsin Public Service Corp.	03/19	Wisconsin Public Service Corp.	6690-UR-126	Return on Equity
Wyoming Public Service Commission				
Montana-Dakota Utilities Co.	10/24	Montana-Dakota Utilities Co.	Docket No. 30013-415-GR-24	Return on Equity
PacifiCorp d/b/a Rocky Mountain Power	08/24	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20000-671-ER-24	Return on Equity
PacifiCorp d/b/a Rocky Mountain Power	02/23	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20000-633-ER-23	Return on Equity
PacifiCorp d/b/a Rocky Mountain Power	03/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20000-578-ER-20	Return on Equity
Montana-Dakota Utilities Co.	05/19	Montana-Dakota Utilities Co.	30013-351-GR-19	Return on Equity

CERTIFICATIONS/ACCREDITATIONS

Certified General Appraiser, licensed in the Commonwealth of Massachusetts

COST OF EQUITY ANALYSES
SUMMARY OF RESULTS

Constant Growth DCF

	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Median			
30-Day Avg. Stock Price	9.42%	10.63%	11.36%
90-Day Avg. Stock Price	9.51%	10.92%	11.46%
180-Day Avg. Stock Price	9.36%	11.17%	11.59%
Average	9.43%	10.91%	11.47%

CAPM and ECAPM

	30-Year Treasury Bond Yield		
	Current 30-Day Avg	Near-Term Projected	Longer-Term Projected
CAPM:			
Current *Value Line* Beta	11.57%	11.56%	11.53%
Current *Bloomberg* Beta	10.59%	10.57%	10.52%
Long-term Avg. *Value Line* Beta	10.65%	10.62%	10.57%
ECAPM:			
Current *Value Line* Beta	11.82%	11.81%	11.79%
Current *Bloomberg* Beta	11.09%	11.07%	11.03%
Long-term Avg. *Value Line* Beta	11.13%	11.11%	11.07%

PROXY GROUP SCREENING DATA AND RESULTS

Company	Ticker	[1] Dividends	[2] S&P Credit Rating Between BBB- and AAA	[3] Positive Growth Rates from at least two sources (Value Line, S&P Capital IQ, and Zacks)	[4] % Regul. Oper. Income to Total Oper. Income > 70%	[5] Announced Merger
Atmos Energy Corporation	ATO	No	A-	Yes	100.00%	No
NiSource Inc.	NI	Yes	BBB+	Yes	99.89%	No
Northwest Natural Gas Company	NWN	Yes	A-	Yes	100.00%	No
ONE Gas, Inc.	OGS	Yes	A-	Yes	100.00%	No
Southwest Gas Corporation	SWX	Yes	BBB-	Yes	86.75%	No
Spire, Inc.	SR	Yes	BBB+	Yes	83.38%	No
American States Water Company	AWR	No	A	Yes	84.27%	No
California Water Service Group	CWT	Yes	A+	Yes	95.94%	No
Middlesex Water Company	MSEX	Yes	A	Yes	91.29%	No
SJW Group	SJW	Yes	A-	Yes	98.03%	No
Essential Utilities, Inc.	WTRG	Yes	A-	Yes	99.01%	No

Notes:

[1] Bloomberg Professional

[2] Bloomberg Professional

[3] Value Line, Zacks and S&P Capital IQ

[4] Form 10-K's for 2023, 2022, and 2021

[5] S&P Capital IQ Pro Financial News Releases

30-DAY CONSTANT GROWTH DCF

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Projected EPS Growth Rate	S&P Capital IQ Projected EPS Growth Rate	Zacks Projected EPS Growth Rate	Average Projected EPS Growth Rate	Cost of Equity: Minimum Growth Rate	Cost of Equity: Mean Growth Rate	Cost of Equity: Maximum Growth Rate
Atmos Energy Corporation	ATO	$3.48	$149.66	2.33%	2.41%	6.00%	7.52%	7.10%	6.87%	8.40%	9.28%	9.94%
NiSource Inc.	NI	$1.12	$39.62	2.83%	2.95%	9.50%	8.22%	8.20%	8.64%	11.14%	11.59%	12.46%
Northwest Natural Gas Company	NWN	$1.96	$41.60	4.71%	4.86%	6.50%	6.50%	n/a	6.50%	11.36%	11.36%	11.36%
ONE Gas, Inc.	OGS	$2.68	$73.90	3.63%	3.70%	4.00%	3.83%	4.70%	4.18%	7.52%	7.88%	8.41%
Southwest Gas Corporation	SWX	$2.48	$74.65	3.32%	3.48%	10.00%	12.60%	6.60%	9.73%	10.03%	13.22%	16.13%
Spire, Inc.	SR	$3.14	$75.89	4.14%	4.27%	4.50%	8.08%	6.50%	6.36%	8.73%	10.63%	12.39%
American States Water Company	AWR	$1.86	$76.98	2.42%	2.47%	6.50%	1.75%	n/a	4.12%	4.19%	6.59%	9.00%
California Water Service Group	CWT	$1.20	$46.56	2.58%	2.93%	13.00%	42.44%	n/a	27.72%	15.74%	30.66%	45.57%
Middlesex Water Company	MSEX	$1.36	$58.28	2.33%	2.46%	7.00%	13.96%	n/a	10.48%	9.42%	12.94%	16.46%
SJW Group	SJW	$1.68	$53.31	3.15%	3.24%	7.00%	4.52%	n/a	5.76%	7.74%	9.00%	10.26%
Essential Utilities, Inc.	WTRG	$1.30	$38.40	3.39%	3.50%	7.00%	6.51%	6.60%	6.70%	10.01%	10.21%	10.51%
Median										9.42%	10.63%	11.36%

Notes:

[1] Bloomberg Professional as of March 31, 2025

[2] Bloomberg Professional 30-day average as of March 31, 2025

[3] Equals [1]/[2]

[4] Equals [3] x (1 + 0.5 x [8])

[5] Value Line

[6] S&P Capital IQ

[7] Zacks

[8] Equals average of [5], [6], [7]

[9] Equals [3] x (1 + 0.5 x (min([5], [6], [7])) + (min([5], [6], [7])

[10] Equals [4] + [8]

[11] Equals [3] x (1 + 0.5 x (max([5], [6], [7])) + (max([5], [6], [7])

[12] S&P Capital IQ and Zacks reported an equivalent projected EPS growth rate for AWR, CWT, MSEX and SJW. To avoid doubling counting, I excluded the projected EPS growth rate from Zacks for AWR, CWT, MSEX and SJW.

90-DAY CONSTANT GROWTH DCF

Company	Ticker	[1] Annualized Dividend	[2] Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Value Line Projected EPS Growth Rate	[6] S&P Capital IQ Projected EPS Growth Rate	[7] Zacks Projected EPS Growth Rate	[8] Average Projected EPS Growth Rate	[9] Cost of Equity: Minimum Growth Rate	[10] Cost of Equity: Mean Growth Rate	[11] Cost of Equity: Maximum Growth Rate
Atmos Energy Corporation	ATO	$3.48	$144.43	2.41%	2.49%	6.00%	7.52%	7.10%	6.87%	8.48%	9.37%	10.02%
NiSource Inc.	NI	$1.12	$37.85	2.96%	3.09%	9.50%	8.22%	8.20%	8.64%	11.28%	11.73%	12.60%
Northwest Natural Gas Company	NWN	$1.96	$40.77	4.81%	4.96%	6.50%	6.50%	n/a	6.50%	11.46%	11.46%	11.46%
ONE Gas, Inc.	OGS	$2.68	$71.89	3.73%	3.81%	4.00%	3.83%	4.70%	4.18%	7.63%	7.98%	8.52%
Southwest Gas Corporation	SWX	$2.48	$73.75	3.36%	3.53%	10.00%	12.60%	6.60%	9.73%	10.07%	13.26%	16.18%
Spire, Inc.	SR	$3.14	$71.09	4.42%	4.56%	4.50%	8.08%	6.50%	6.36%	9.02%	10.92%	12.68%
American States Water Company	AWR	$1.86	$77.33	2.41%	2.46%	6.50%	1.75%	n/a	4.12%	4.18%	6.58%	8.99%
California Water Service Group	CWT	$1.20	$46.26	2.59%	2.95%	13.00%	42.44%	n/a	27.72%	15.76%	30.67%	45.59%
Middlesex Water Company	MSEX	$1.36	$56.07	2.43%	2.55%	7.00%	13.96%	n/a	10.48%	9.51%	13.03%	16.56%
SJW Group	SJW	$1.68	$51.54	3.26%	3.35%	7.00%	4.52%	n/a	5.76%	7.85%	9.11%	10.37%
Essential Utilities, Inc.	WTRG	$1.30	$37.07	3.51%	3.63%	7.00%	6.51%	6.60%	6.70%	10.14%	10.33%	10.64%
Median										9.51%	10.92%	11.46%

Notes:

[1] Bloomberg Professional as of March 31, 2025

[2] Bloomberg Professional 90-day average as of March 31, 2025

[3] Equals [1]/[2]

[4] Equals [3] x (1 + 0.5 x [8])

[5] Value Line

[6] S&P Capital IQ

[7] Zacks

[8] Equals average of [5], [6], [7]

[9] Equals [3] x (1 + 0.5 x (min([5], [6], [7])) + (min([5], [6], [7])

[10] Equals [4] + [8]

[11] Equals [3] x (1 + 0.5 x (max([5], [6], [7])) + (max([5], [6], [7])

[12] S&P Capital IQ and Zacks reported an equivalent projected EPS growth rate for AWR, CWT, MSEX and SJW. To avoid doubling counting, I excluded the projected EPS growth rate from Zacks for AWR, CWT, MSEX and SJW.

180-DAY CONSTANT GROWTH DCF

Company	Ticker	[1] Annualized Dividend	[2] Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Value Line Projected EPS Growth Rate	[6] S&P Capital IQ Projected EPS Growth Rate	[7] Zacks Projected EPS Growth Rate	[8] Average Projected EPS Growth Rate	[9] Cost of Equity: Minimum Growth Rate	[10] Cost of Equity: Mean Growth Rate	[11] Cost of Equity: Maximum Growth Rate
Atmos Energy Corporation	ATO	$3.48	$138.49	2.51%	2.60%	6.00%	7.52%	7.10%	6.87%	8.59%	9.47%	10.13%
NiSource Inc.	NI	$1.12	$35.34	3.17%	3.31%	9.50%	8.22%	8.20%	8.64%	11.50%	11.95%	12.82%
Northwest Natural Gas Company	NWN	$1.96	$39.77	4.93%	5.09%	6.50%	6.50%	n/a	6.50%	11.59%	11.59%	11.59%
ONE Gas, Inc.	OGS	$2.68	$70.66	3.79%	3.87%	4.00%	3.83%	4.70%	4.18%	7.69%	8.05%	8.58%
Southwest Gas Corporation	SWX	$2.48	$72.79	3.41%	3.57%	10.00%	12.60%	6.60%	9.73%	10.12%	13.31%	16.22%
Spire, Inc.	SR	$3.14	$67.37	4.66%	4.81%	4.50%	8.08%	6.50%	6.36%	9.27%	11.17%	12.93%
American States Water Company	AWR	$1.86	$79.44	2.34%	2.39%	6.50%	1.75%	n/a	4.12%	4.11%	6.52%	8.92%
California Water Service Group	CWT	$1.20	$49.28	2.43%	2.77%	13.00%	42.44%	n/a	27.72%	15.59%	30.49%	45.39%
Middlesex Water Company	MSEX	$1.36	$59.54	2.28%	2.40%	7.00%	13.96%	n/a	10.48%	9.36%	12.88%	16.40%
SJW Group	SJW	$1.68	$54.43	3.09%	3.18%	7.00%	4.52%	n/a	5.76%	7.68%	8.93%	10.19%
Essential Utilities, Inc.	WTRG	$1.30	$37.87	3.44%	3.55%	7.00%	6.51%	6.60%	6.70%	10.06%	10.26%	10.56%
Median										9.36%	11.17%	11.59%

Notes:

[1] Bloomberg Professional as of March 31, 2025

[2] Bloomberg Professional 180-day average as of March 31, 2025

[3] Equals [1]/[2]

[4] Equals [3] x (1 + 0.5 x [8])

[5] Value Line

[6] S&P Capital IQ

[7] Zacks

[8] Equals average of [5], [6], [7]

[9] Equals [3] x (1 + 0.5 x (min([5], [6], [7])) + (min([5], [6], [7])

[10] Equals [4] + [8]

[11] Equals [3] x (1 + 0.5 x (max([5], [6], [7])) + (max([5], [6], [7])

[12] S&P Capital IQ and Zacks reported an equivalent projected EPS growth rate for AWR, CWT, MSEX and SJW. To avoid doubling counting, I excluded the projected EPS growth rate from Zacks for AWR, CWT, MSEX and SJW.

30-DAY CONSTANT GROWTH DCF - EXCL. CWT'S S&P PROJ EPS GROWTH RATE

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Projected EPS Growth Rate	S&P Capital IQ Projected EPS Growth Rate	Zacks Projected EPS Growth Rate	Average Projected EPS Growth Rate	Cost of Equity: Minimum Growth Rate	Cost of Equity: Mean Growth Rate	Cost of Equity: Maximum Growth Rate
Atmos Energy Corporation	ATO	$3.48	$149.66	2.33%	2.41%	6.00%	7.52%	7.10%	6.87%	8.40%	9.28%	9.94%
NiSource Inc.	NI	$1.12	$39.62	2.83%	2.95%	9.50%	8.22%	8.20%	8.64%	11.14%	11.59%	12.46%
Northwest Natural Gas Company	NWN	$1.96	$41.60	4.71%	4.86%	6.50%	6.50%	n/a	6.50%	11.36%	11.36%	11.36%
ONE Gas, Inc.	OGS	$2.68	$73.90	3.63%	3.70%	4.00%	3.83%	4.70%	4.18%	7.52%	7.88%	8.41%
Southwest Gas Corporation	SWX	$2.48	$74.65	3.32%	3.48%	10.00%	12.60%	6.60%	9.73%	10.03%	13.22%	16.13%
Spire, Inc.	SR	$3.14	$75.89	4.14%	4.27%	4.50%	8.08%	6.50%	6.36%	8.73%	10.63%	12.39%
American States Water Company	AWR	$1.86	$76.98	2.42%	2.47%	6.50%	1.75%	n/a	4.12%	4.19%	6.59%	9.00%
California Water Service Group	CWT	$1.20	$46.56	2.58%	2.74%	13.00%	n/a	n/a	13.00%	15.74%	15.74%	15.74%
Middlesex Water Company	MSEX	$1.36	$58.28	2.33%	2.46%	7.00%	13.96%	n/a	10.48%	9.42%	12.94%	16.46%
SJW Group	SJW	$1.68	$53.31	3.15%	3.24%	7.00%	4.52%	n/a	5.76%	7.74%	9.00%	10.26%
Essential Utilities, Inc.	WTRG	$1.30	$38.40	3.39%	3.50%	7.00%	6.51%	6.60%	6.70%	10.01%	10.21%	10.51%
Median										9.42%	10.63%	11.36%

Notes:
[1] Bloomberg Professional as of March 31, 2025
[2] Bloomberg Professional 30-day average as of March 31, 2025
[3] Equals [1]/[2]
[4] Equals [3] x (1 + 0.5 x [8])
[5] Value Line
[6] S&P Capital IQ
[7] Zacks
[8] Equals average of [5], [6], [7]
[9] Equals [3] x (1 + 0.5 x (min([5], [6], [7])) + (min([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.5 x (max([5], [6], [7])) + (max([5], [6], [7])
[12] S&P Capital IQ and Zacks reported an equivalent projected EPS growth rate for AWR, CWT, MSEX and SJW. To avoid doubling counting, I excluded the projected EPS growth rate from Zacks for AWR, CWT, MSEX and SJW.

90-DAY CONSTANT GROWTH DCF - EXCL. CWT'S S&P PROJ EPS GROWTH RATE

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Projected EPS Growth Rate	S&P Capital IQ Projected EPS Growth Rate	Zacks Projected EPS Growth Rate	Average Projected EPS Growth Rate	Cost of Equity: Minimum Growth Rate	Cost of Equity: Mean Growth Rate	Cost of Equity: Maximum Growth Rate
Atmos Energy Corporation	ATO	$3.48	$144.43	2.41%	2.49%	6.00%	7.52%	7.10%	6.87%	8.48%	9.37%	10.02%
NiSource Inc.	NI	$1.12	$37.85	2.96%	3.09%	9.50%	8.22%	8.20%	8.64%	11.28%	11.73%	12.60%
Northwest Natural Gas Company	NWN	$1.96	$40.77	4.81%	4.96%	6.50%	6.50%	n/a	6.50%	11.46%	11.46%	11.46%
ONE Gas, Inc.	OGS	$2.68	$71.89	3.73%	3.81%	4.00%	3.83%	4.70%	4.18%	7.63%	7.98%	8.52%
Southwest Gas Corporation	SWX	$2.48	$73.75	3.36%	3.53%	10.00%	12.60%	6.60%	9.73%	10.07%	13.26%	16.18%
Spire, Inc.	SR	$3.14	$71.09	4.42%	4.56%	4.50%	8.08%	6.50%	6.36%	9.02%	10.92%	12.68%
American States Water Company	AWR	$1.86	$77.33	2.41%	2.46%	6.50%	1.75%	n/a	4.12%	4.18%	6.58%	8.99%
California Water Service Group	CWT	$1.20	$46.26	2.59%	2.76%	13.00%	n/a	n/a	13.00%	15.76%	15.76%	15.76%
Middlesex Water Company	MSEX	$1.36	$56.07	2.43%	2.55%	7.00%	13.96%	n/a	10.48%	9.51%	13.03%	16.56%
SJW Group	SJW	$1.68	$51.54	3.26%	3.35%	7.00%	4.52%	n/a	5.76%	7.85%	9.11%	10.37%
Essential Utilities, Inc.	WTRG	$1.30	$37.07	3.51%	3.63%	7.00%	6.51%	6.60%	6.70%	10.14%	10.33%	10.64%
Median										9.51%	10.92%	11.46%

Notes:

[1] Bloomberg Professional as of March 31, 2025

[2] Bloomberg Professional 90-day average as of March 31, 2025

[3] Equals [1]/[2]

[4] Equals [3] x (1 + 0.5 x [8])

[5] Value Line

[6] S&P Capital IQ

[7] Zacks

[8] Equals average of [5], [6], [7]

[9] Equals [3] x (1 + 0.5 x (min([5], [6], [7])) + (min([5], [6], [7])

[10] Equals [4] + [8]

[11] Equals [3] x (1 + 0.5 x (max([5], [6], [7])) + (max([5], [6], [7])

[12] S&P Capital IQ and Zacks reported an equivalent projected EPS growth rate for AWR, CWT, MSEX and SJW. To avoid doubling counting, I excluded the projected EPS growth rate from Zacks for AWR, CWT, MSEX and SJW.

180-DAY CONSTANT GROWTH DCF - EXCL. CWT'S S&P PROJ EPS GROWTH RATE

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Projected EPS Growth Rate	S&P Capital IQ Projected EPS Growth Rate	Zacks Projected EPS Growth Rate	Average Projected EPS Growth Rate	Cost of Equity: Minimum Growth Rate	Cost of Equity: Mean Growth Rate	Cost of Equity: Maximum Growth Rate
Atmos Energy Corporation	ATO	$3.48	$138.49	2.51%	2.60%	6.00%	7.52%	7.10%	6.87%	8.59%	9.47%	10.13%
NiSource Inc.	NI	$1.12	$35.34	3.17%	3.31%	9.50%	8.22%	8.20%	8.64%	11.50%	11.95%	12.82%
Northwest Natural Gas Company	NWN	$1.96	$39.77	4.93%	5.09%	6.50%	6.50%	n/a	6.50%	11.59%	11.59%	11.59%
ONE Gas, Inc.	OGS	$2.68	$70.66	3.79%	3.87%	4.00%	3.83%	4.70%	4.18%	7.69%	8.05%	8.58%
Southwest Gas Corporation	SWX	$2.48	$72.79	3.41%	3.57%	10.00%	12.60%	6.60%	9.73%	10.12%	13.31%	16.22%
Spire, Inc.	SR	$3.14	$67.37	4.66%	4.81%	4.50%	8.08%	6.50%	6.36%	9.27%	11.17%	12.93%
American States Water Company	AWR	$1.86	$79.44	2.34%	2.39%	6.50%	1.75%	n/a	4.12%	4.11%	6.52%	8.92%
California Water Service Group	CWT	$1.20	$49.28	2.43%	2.59%	13.00%	n/a	n/a	13.00%	15.59%	15.59%	15.59%
Middlesex Water Company	MSEX	$1.36	$59.54	2.28%	2.40%	7.00%	13.96%	n/a	10.48%	9.36%	12.88%	16.40%
SJW Group	SJW	$1.68	$54.43	3.09%	3.18%	7.00%	4.52%	n/a	5.76%	7.68%	8.93%	10.19%
Essential Utilities, Inc.	WTRG	$1.30	$37.87	3.44%	3.55%	7.00%	6.51%	6.60%	6.70%	10.06%	10.26%	10.56%
Median										9.36%	11.17%	11.59%

Notes:

[1] Bloomberg Professional as of March 31, 2025

[2] Bloomberg Professional 180-day average as of March 31, 2025

[3] Equals [1]/[2]

[4] Equals [3] x (1 + 0.5 x [8])

[5] Value Line

[6] S&P Capital IQ

[7] Zacks

[8] Equals average of [5], [6], [7]

[9] Equals [3] x (1 + 0.5 x (min([5], [6], [7])) + (min([5], [6], [7])

[10] Equals [4] + [8]

[11] Equals [3] x (1 + 0.5 x (max([5], [6], [7])) + (max([5], [6], [7])

[12] S&P Capital IQ and Zacks reported an equivalent projected EPS growth rate for AWR, CWT, MSEX and SJW. To avoid doubling counting, I excluded the projected EPS growth rate from Zacks for AWR, CWT, MSEX and SJW.

CAPITAL ASSET PRICING MODEL
CURRENT RISK FREE RATE AND VALUE LINE BETA

Company	Ticker	[1] Current 30-day average of 30-year U.S. Treasury bond yield	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] Cost of Equity: CAPM	[6] Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.61%	0.90	12.58%	7.97%	11.78%	11.98%
NiSource Inc.	NI	4.61%	0.95	12.58%	7.97%	12.18%	12.28%
Northwest Natural Gas Company	NWN	4.61%	0.90	12.58%	7.97%	11.78%	11.98%
ONE Gas, Inc.	OGS	4.61%	0.85	12.58%	7.97%	11.39%	11.69%
Southwest Gas Corporation	SWX	4.61%	0.95	12.58%	7.97%	12.18%	12.28%
Spire, Inc.	SR	4.61%	0.90	12.58%	7.97%	11.78%	11.98%
American States Water Company	AWR	4.61%	0.75	12.58%	7.97%	10.59%	11.09%
California Water Service Group	CWT	4.61%	0.75	12.58%	7.97%	10.59%	11.09%
Middlesex Water Company	MSEX	4.61%	0.80	12.58%	7.97%	10.99%	11.39%
SJW Group	SJW	4.61%	0.85	12.58%	7.97%	11.39%	11.69%
Essential Utilities, Inc.	WTRG	4.61%	1.00	12.58%	7.97%	12.58%	12.58%
Mean						11.57%	11.82%
Median						11.78%	11.98%

Notes:
[1] Bloomberg Professional 30-day average as of March 31, 2025
[2] Value Line
[3] Exhibit AEB-6
[4] Equals [3]-[1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
NEAR TERM PROJECTED RISK-FREE RATE AND VALUE LINE BETA

Company	Ticker	[1] Near-term projected 30-year U.S. Treasury bond yield (Q3 2025 - Q3 2026)	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] Cost of Equity: CAPM	[6] Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.52%	0.90	12.58%	8.06%	11.78%	11.98%
NiSource Inc.	NI	4.52%	0.95	12.58%	8.06%	12.18%	12.28%
Northwest Natural Gas Company	NWN	4.52%	0.90	12.58%	8.06%	11.78%	11.98%
ONE Gas, Inc.	OGS	4.52%	0.85	12.58%	8.06%	11.37%	11.68%
Southwest Gas Corporation	SWX	4.52%	0.95	12.58%	8.06%	12.18%	12.28%
Spire, Inc.	SR	4.52%	0.90	12.58%	8.06%	11.78%	11.98%
American States Water Company	AWR	4.52%	0.75	12.58%	8.06%	10.57%	11.07%
California Water Service Group	CWT	4.52%	0.75	12.58%	8.06%	10.57%	11.07%
Middlesex Water Company	MSEX	4.52%	0.80	12.58%	8.06%	10.97%	11.37%
SJW Group	SJW	4.52%	0.85	12.58%	8.06%	11.37%	11.68%
Essential Utilities, Inc.	WTRG	4.52%	1.00	12.58%	8.06%	12.58%	12.58%
Mean						11.56%	11.81%
Median						11.78%	11.98%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 44, No. 4, April 1, 2025, at 2.
[2] Value Line
[3] Exhibit AEB-6
[4] Equals [3]-[1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
LONG-TERM PROJECTED RISK-FREE RATE AND VALUE LINE BETA

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2026 - 2030)	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.30%	0.90	12.58%	8.28%	11.75%	11.96%
NiSource Inc.	NI	4.30%	0.95	12.58%	8.28%	12.17%	12.27%
Northwest Natural Gas Company	NWN	4.30%	0.90	12.58%	8.28%	11.75%	11.96%
ONE Gas, Inc.	OGS	4.30%	0.85	12.58%	8.28%	11.34%	11.65%
Southwest Gas Corporation	SWX	4.30%	0.95	12.58%	8.28%	12.17%	12.27%
Spire, Inc.	SR	4.30%	0.90	12.58%	8.28%	11.75%	11.96%
American States Water Company	AWR	4.30%	0.75	12.58%	8.28%	10.51%	11.03%
California Water Service Group	CWT	4.30%	0.75	12.58%	8.28%	10.51%	11.03%
Middlesex Water Company	MSEX	4.30%	0.80	12.58%	8.28%	10.93%	11.34%
SJW Group	SJW	4.30%	0.85	12.58%	8.28%	11.34%	11.65%
Essential Utilities, Inc.	WTRG	4.30%	1.00	12.58%	8.28%	12.58%	12.58%
Mean						11.53%	11.79%
Median						11.75%	11.96%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024, at 14
[2] Value Line
[3] Exhibit AEB-6
[4] Equals [3]-[1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
CURRENT RISK FREE RATE AND BLOOMBERG BETA

Company	Ticker	[1] Current 30-day average of 30-year U.S. Treasury bond yield	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] Cost of Equity: CAPM	[6] Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.61%	0.74	12.58%	7.97%	10.53%	11.04%
NiSource Inc.	NI	4.61%	0.78	12.58%	7.97%	10.87%	11.29%
Northwest Natural Gas Company	NWN	4.61%	0.69	12.58%	7.97%	10.13%	10.75%
ONE Gas, Inc.	OGS	4.61%	0.76	12.58%	7.97%	10.66%	11.14%
Southwest Gas Corporation	SWX	4.61%	0.83	12.58%	7.97%	11.21%	11.55%
Spire, Inc.	SR	4.61%	0.76	12.58%	7.97%	10.65%	11.14%
American States Water Company	AWR	4.61%	0.64	12.58%	7.97%	9.73%	10.44%
California Water Service Group	CWT	4.61%	0.68	12.58%	7.97%	10.05%	10.68%
Middlesex Water Company	MSEX	4.61%	0.75	12.58%	7.97%	10.58%	11.08%
SJW Group	SJW	4.61%	0.78	12.58%	7.97%	10.85%	11.28%
Essential Utilities, Inc.	WTRG	4.61%	0.84	12.58%	7.97%	11.27%	11.60%
Mean						10.59%	11.09%
Median						10.65%	11.14%

Notes:
[1] Bloomberg Professional 30-day average as of March 31, 2025
[2] Bloomberg Professional
[3] Exhibit AEB-6
[4] Equals [3]-[1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
NEAR TERM PROJECTED RISK-FREE RATE AND BLOOMBERG BETA

Company	Ticker	[1] Near-term projected 30-year U.S. Treasury bond yield (Q3 2025 - Q3 2026)	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] Cost of Equity: CAPM	[6] Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.52%	0.74	12.58%	8.06%	10.50%	11.02%
NiSource Inc.	NI	4.52%	0.78	12.58%	8.06%	10.85%	11.28%
Northwest Natural Gas Company	NWN	4.52%	0.69	12.58%	8.06%	10.11%	10.73%
ONE Gas, Inc.	OGS	4.52%	0.76	12.58%	8.06%	10.64%	11.13%
Southwest Gas Corporation	SWX	4.52%	0.83	12.58%	8.06%	11.19%	11.54%
Spire, Inc.	SR	4.52%	0.76	12.58%	8.06%	10.63%	11.12%
American States Water Company	AWR	4.52%	0.64	12.58%	8.06%	9.69%	10.42%
California Water Service Group	CWT	4.52%	0.68	12.58%	8.06%	10.02%	10.66%
Middlesex Water Company	MSEX	4.52%	0.75	12.58%	8.06%	10.55%	11.06%
SJW Group	SJW	4.52%	0.78	12.58%	8.06%	10.83%	11.27%
Essential Utilities, Inc.	WTRG	4.52%	0.84	12.58%	8.06%	11.26%	11.59%
Mean						10.57%	11.07%
Median						10.63%	11.12%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 44, No. 4, April 1, 2025, at 2.
[2] Bloomberg Professional
[3] Exhibit AEB-6
[4] Equals [3]-[1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
LONG-TERM PROJECTED RISK-FREE RATE AND BLOOMBERG BETA

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2026 - 2030)	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.30%	0.74	12.58%	8.28%	10.45%	10.98%
NiSource Inc.	NI	4.30%	0.78	12.58%	8.28%	10.80%	11.24%
Northwest Natural Gas Company	NWN	4.30%	0.69	12.58%	8.28%	10.04%	10.67%
ONE Gas, Inc.	OGS	4.30%	0.76	12.58%	8.28%	10.59%	11.09%
Southwest Gas Corporation	SWX	4.30%	0.83	12.58%	8.28%	11.16%	11.51%
Spire, Inc.	SR	4.30%	0.76	12.58%	8.28%	10.58%	11.08%
American States Water Company	AWR	4.30%	0.64	12.58%	8.28%	9.61%	10.36%
California Water Service Group	CWT	4.30%	0.68	12.58%	8.28%	9.95%	10.61%
Middlesex Water Company	MSEX	4.30%	0.75	12.58%	8.28%	10.50%	11.02%
SJW Group	SJW	4.30%	0.78	12.58%	8.28%	10.78%	11.23%
Essential Utilities, Inc.	WTRG	4.30%	0.84	12.58%	8.28%	11.22%	11.56%
Mean						10.52%	11.03%
Median						10.58%	11.08%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024, at 14
[2] Bloomberg Professional
[3] Exhibit AEB-6
[4] Equals [3]-[1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
CURRENT RISK FREE RATE AND LONG-TERM VALUE LINE BETA

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.61%	0.76	12.58%	7.97%	10.69%	11.16%
NiSource Inc.	NI	4.61%	0.78	12.58%	7.97%	10.79%	11.24%
Northwest Natural Gas Company	NWN	4.61%	0.73	12.58%	7.97%	10.39%	10.94%
ONE Gas, Inc.	OGS	4.61%	0.75	12.58%	7.97%	10.59%	11.09%
Southwest Gas Corporation	SWX	4.61%	0.84	12.58%	7.97%	11.29%	11.61%
Spire, Inc.	SR	4.61%	0.75	12.58%	7.97%	10.62%	11.11%
American States Water Company	AWR	4.61%	0.70	12.58%	7.97%	10.16%	10.76%
California Water Service Group	CWT	4.61%	0.71	12.58%	7.97%	10.26%	10.84%
Middlesex Water Company	MSEX	4.61%	0.74	12.58%	7.97%	10.52%	11.04%
SJW Group	SJW	4.61%	0.77	12.58%	7.97%	10.76%	11.21%
Essential Utilities, Inc.	WTRG	4.61%	0.81	12.58%	7.97%	11.05%	11.44%
Mean						10.65%	11.13%
Median						10.62%	11.11%

Notes:
[1] Bloomberg Professional 30-day average as of March 31, 2025
[2] Source: LT Beta
[3] Exhibit AEB-6
[4] Equals [3]-[1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
NEAR-TERM PROJECTED RISK FREE RATE AND LONG-TERM VALUE LINE BETA

Company	Ticker	[1] Near-term projected 30-year U.S. Treasury bond yield (Q3 2025 - Q3 2026)	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] Cost of Equity: CAPM	[6] Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.52%	0.76	12.58%	8.06%	10.67%	11.15%
NiSource Inc.	NI	4.52%	0.78	12.58%	8.06%	10.77%	11.22%
Northwest Natural Gas Company	NWN	4.52%	0.73	12.58%	8.06%	10.37%	10.92%
ONE Gas, Inc.	OGS	4.52%	0.75	12.58%	8.06%	10.57%	11.07%
Southwest Gas Corporation	SWX	4.52%	0.84	12.58%	8.06%	11.27%	11.60%
Spire, Inc.	SR	4.52%	0.75	12.58%	8.06%	10.60%	11.10%
American States Water Company	AWR	4.52%	0.70	12.58%	8.06%	10.13%	10.74%
California Water Service Group	CWT	4.52%	0.71	12.58%	8.06%	10.23%	10.82%
Middlesex Water Company	MSEX	4.52%	0.74	12.58%	8.06%	10.50%	11.02%
SJW Group	SJW	4.52%	0.77	12.58%	8.06%	10.73%	11.20%
Essential Utilities, Inc.	WTRG	4.52%	0.81	12.58%	8.06%	11.04%	11.42%
Mean						10.62%	11.11%
Median						10.60%	11.10%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 44, No. 4, April 1, 2025, at 2.
[2] Source: LT Beta
[3] Exhibit AEB-6
[4] Equals [3]-[1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
LONG-TERM PROJECTED RISK FREE RATE AND LONG-TERM VALUE LINE BETA

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2026 - 2030)	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.30%	0.76	12.58%	8.28%	10.62%	11.11%
NiSource Inc.	NI	4.30%	0.78	12.58%	8.28%	10.72%	11.18%
Northwest Natural Gas Company	NWN	4.30%	0.73	12.58%	8.28%	10.30%	10.87%
ONE Gas, Inc.	OGS	4.30%	0.75	12.58%	8.28%	10.51%	11.03%
Southwest Gas Corporation	SWX	4.30%	0.84	12.58%	8.28%	11.24%	11.57%
Spire, Inc.	SR	4.30%	0.75	12.58%	8.28%	10.55%	11.06%
American States Water Company	AWR	4.30%	0.70	12.58%	8.28%	10.06%	10.69%
California Water Service Group	CWT	4.30%	0.71	12.58%	8.28%	10.17%	10.77%
Middlesex Water Company	MSEX	4.30%	0.74	12.58%	8.28%	10.44%	10.98%
SJW Group	SJW	4.30%	0.77	12.58%	8.28%	10.68%	11.16%
Essential Utilities, Inc.	WTRG	4.30%	0.81	12.58%	8.28%	10.99%	11.39%
Mean						10.57%	11.07%
Median						10.55%	11.06%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024, at 14
[2] Source: LT Beta
[3] Exhibit AEB-6
[4] Equals [3]-[1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

HISTORICAL VALUE LINE BETA

Company	Ticker	[1] 12/31/2013	[2] 12/31/2014	[3] 12/31/2015	[4] 12/31/2016	[5] 12/31/2017	[6] 12/31/2018	[7] 12/31/2019	[8] 12/31/2020	[9] 12/31/2021	[10] 12/31/2022	[11] 12/31/2023	[12] 12/31/2024	[13] Average
Atmos Energy Corporation	ATO	0.80	0.80	0.80	0.70	0.70	0.60	0.60	0.80	0.80	0.80	0.85	0.90	0.76
NiSource Inc.	NI	0.85	0.85	NMF	NMF	0.60	0.50	0.55	0.85	0.85	0.85	0.90	0.95	0.78
Northwest Natural Gas Company	NWN	0.65	0.70	0.65	0.65	0.70	0.60	0.60	0.80	0.85	0.80	0.80	0.90	0.73
ONE Gas, Inc.	OGS				0.70	0.70	0.65	0.65	0.80	0.80	0.80	0.80	0.85	0.75
Southwest Gas Corporation	SWX	0.80	0.85	0.80	0.75	0.80	0.70	0.70	0.95	0.95	0.90	0.90	0.95	0.84
Spire, Inc.	SR	0.65	0.70	0.70	0.70	0.70	0.65	0.65	0.85	0.85	0.85	0.85	0.90	0.75
American States Water Company	AWR	0.65	0.70	0.70	0.75	0.80	0.70	0.65	0.65	0.65	0.65	0.70	0.75	0.70
California Water Service Group	CWT	0.60	0.70	0.75	0.75	0.80	0.70	0.70	0.65	0.70	0.70	0.70	0.75	0.71
Middlesex Water Company	MSEX	0.75	0.70	0.70	0.75	0.80	0.75	0.75	0.75	0.70	0.70	0.75	0.80	0.74
SJW Group	SJW	0.85	0.85	0.75	0.75	0.70	0.60	0.60	0.85	0.80	0.80	0.85	0.85	0.77
Essential Utilities, Inc.	WTRG	0.60	0.70	0.75	0.70	0.75	0.70	0.65	0.95	0.95	0.95	1.00	1.00	0.81
Mean		0.72	0.76	0.73	0.72	0.73	0.65	0.65	0.81	0.81	0.80	0.83	0.87	0.76

Notes:

[1] Value Line, dated December 26, 2013
[2] Value Line, dated December 31, 2014
[3] Value Line, dated December 30, 2015
[4] Value Line, dated December 29, 2016
[5] Value Line, dated December 28, 2017
[6] Value Line, dated December 27, 2018
[7] Value Line, dated December 26, 2019
[8] Value Line, dated December 30, 2020
[9] Value Line, dated December 29, 2021
[10] Value Line, dated December 30, 2022
[11] Value Line, Dated December 29, 2023
[12] Value Line, Dated December 27, 2024
[13] Average ([1] - [12])

MARKET RETURN DERIVED FROM S&P 500 INDEX

[1] Estimate of the S&P 500 Dividend Yield	1.36%
[2] Estimate of the S&P 500 Growth Rate	11.15%
[3] S&P 500 Estimated Required Market Return	12.58%

Name	Ticker	[4] Shares Outst'g	[5] Price	[6] Market Capitalization	[7] Weight in Index	[8] Estimated Dividend Yield	[9] Cap-Weighted Dividend Yield	[10] Bloomberg Long-Term Growth Est.	[11] Cap-Weighted Long-Term Growth Est.
LyondellBasell Industries NV	LYB	323.446	70.4	22,770.61	0.07%	7.61%	0.00%	11.14%	0.01%
American Express Co	AXP	701.110	269.05	188,633.52	0.54%	1.22%	0.01%	15.16%	0.08%
Verizon Communications Inc	VZ	4209.704	45.36	190,952.17	0.55%	5.97%	0.03%	1.43%	0.01%
Texas Pacific Land Corp	TPL	22.985	1324.99	30,454.63		0.48%			
Broadcom Inc	AVGO	4701.949	167.43	787,247.27		1.41%		23.48%	
Boeing Co/The	BA	752.407	170.55	128,323.10				30.85%	
Solventum Corp	SOLV	173.003	76.04	13,155.14				-0.35%	
Caterpillar Inc	CAT	477.932	329.8	157,621.98	0.45%	1.71%	0.01%	7.23%	0.03%
JPMorgan Chase & Co	JPM	2796.106	245.3	685,884.83		2.28%			
Chevron Corp	CVX	1749.716	167.29	292,709.95		4.09%			
Coca-Cola Co/The	KO	4303.567	71.62	308,221.45	0.89%	2.85%	0.03%	5.69%	0.05%
AbbVie Inc	ABBV	1768.978	209.52	370,636.33	1.07%	3.13%	0.03%	15.54%	0.17%
Walt Disney Co/The	DIS	1807.789	98.7	178,428.76	0.51%	1.01%	0.01%	11.36%	0.06%
Corpay Inc	CPAY	70.250	348.72	24,497.55	0.07%			12.58%	0.01%
Extra Space Storage Inc	EXR	211.998	148.49	31,479.60		4.36%			
Exxon Mobil Corp	XOM	4339.143	118.93	516,054.31		3.33%			
Phillips 66	PSX	407.698	123.48	50,342.59		3.73%			
General Electric Co	GE	1066.579	200.15	213,475.74	0.61%	0.72%	0.00%	18.22%	0.11%
HP Inc	HPQ	942.703	27.69	26,103.45	0.08%	4.18%	0.00%	1.55%	0.00%
Home Depot Inc/The	HD	994.032	366.49	364,302.85	1.05%	2.51%	0.03%	5.11%	0.05%
Monolithic Power Systems Inc	MPWR	47.866	579.98	27,761.32		1.08%			
International Business Machines Corp	IBM	927.264	248.66	230,573.55	0.66%	2.69%	0.02%	3.46%	0.02%
Johnson & Johnson	JNJ	2409.848	165.84	399,649.15		2.99%			
Lululemon Athletica Inc	LULU	115.521	283.06	32,699.44	0.09%			9.55%	0.01%
McDonald's Corp	MCD	714.461	312.37	223,176.23	0.64%	2.27%	0.01%	9.12%	0.06%
Merck & Co Inc	MRK	2526.036	89.76	226,737.01	0.65%	3.61%	0.02%	14.65%	0.10%
3M Co	MMM	539.318	146.86	79,204.29	0.23%	1.99%	0.00%	6.59%	0.02%
American Water Works Co Inc	AWK	195.011	147.52	28,768.02		2.07%			
Bank of America Corp	BAC	7602.798	41.73	317,264.77		2.49%			
Pfizer Inc	PFE	5671.455	25.34	143,714.66		6.79%		-2.32%	
Procter & Gamble Co/The	PG	2344.852	170.42	399,609.65	1.15%	2.36%	0.03%	6.24%	0.07%
AT&T Inc	T	7178.183	28.28	202,999.02	0.58%	3.93%	0.02%	5.16%	0.03%
Travelers Cos Inc/The	TRV	226.727	264.46	59,960.11	0.17%	1.59%	0.00%	1.10%	0.00%
RTX Corp	RTX	1335.090	132.46	176,846.01	0.51%	1.90%	0.01%	8.65%	0.04%
Analog Devices Inc	ADI	495.976	201.67	100,023.58	0.29%	1.96%	0.01%	11.79%	0.03%
Walmart Inc	WMT	8016.849	87.79	703,799.21	2.03%	1.07%	0.02%	7.43%	0.15%
Cisco Systems Inc	CSCO	3978.292	61.71	245,500.43	0.71%	2.66%	0.02%	4.69%	0.03%
Intel Corp	INTC	4360.592	22.71	99,029.04				28.44%	
General Motors Co	GM	995.002	47.03	46,794.94	0.13%	1.02%	0.00%	8.53%	0.01%
Microsoft Corp	MSFT	7433.982	375.39	2,790,642.59	8.03%	0.88%	0.07%	13.09%	1.05%
Dollar General Corp	DG	219.947	87.93	19,339.95	0.06%	2.68%	0.00%	5.74%	0.00%
Cigna Group/The	CI	271.108	329	89,194.56	0.26%	1.84%	0.00%	5.07%	0.01%
Kinder Morgan Inc	KMI	2221.963	28.53	63,392.61		4.03%			
Citigroup Inc	C	1882.160	70.99	133,614.54		3.16%			
American International Group Inc	AIG	593.333	86.94	51,584.37	0.15%	1.84%	0.00%	12.18%	0.02%
Altria Group Inc	MO	1690.662	60.02	101,473.51	0.29%	6.80%	0.02%	4.48%	0.01%
HCA Healthcare Inc	HCA	246.203	345.55	85,075.55	0.24%	0.83%	0.00%	9.26%	0.02%
International Paper Co	IP	526.126	53.35	28,068.80		3.47%			
Hewlett Packard Enterprise Co	HPE	1313.578	15.43	20,268.51	0.06%	3.37%	0.00%	4.02%	0.00%
Abbott Laboratories	ABT	1734.323	132.65	230,058.00	0.66%	1.78%	0.01%	10.26%	0.07%
Aflac Inc	AFL	545.815	111.19	60,689.13	0.17%	2.09%	0.00%	4.80%	0.01%
Air Products and Chemicals Inc	APD	222.476	293.1301	65,214.32	0.19%	2.44%	0.00%	6.37%	0.01%
Super Micro Computer Inc	SMCI	593.481	34.24	20,320.80					
Royal Caribbean Cruises Ltd	RCL	269.129	205.44	55,289.81	0.16%	1.46%	0.00%	19.67%	0.03%
Hess Corp	HES	308.292	159.73	49,243.43		1.25%			
Lennox International Inc	LII	35.580	560.83	19,954.14		0.82%			
Archer-Daniels-Midland Co	ADM	480.156	48.01	23,052.27	0.07%	4.25%	0.00%	7.27%	0.00%
Automatic Data Processing Inc	ADP	406.871	305.53	124,311.26	0.36%	0.020161686	0.01%	9.07%	0.03%
Verisk Analytics Inc	VRSK	140.276	297.62	41,748.99		0.006047981			
AutoZone Inc	AZO	16.729	3812.78	63,782.70	0.18%			9.56%	0.02%
Linde PLC	LIN	472.912	465.64	220,206.57	0.63%	0.012885491	0.01%	8.04%	0.05%
Avery Dennison Corp	AVY	78.966	177.97	14,053.58	0.04%	0.019778614	0.00%	8.96%	0.00%
Enphase Energy Inc	ENPH	132.471	62.05	8,219.80					
MSCI Inc	MSCI	77.602	565.5	43,883.72		0.012732095			
Ball Corp	BALL	282.379	52.07	14,703.47	0.04%	0.015363933	0.00%	11.85%	0.01%

Name	Ticker	[4] Shares Outst'g	[5] Price	[6] Market Capitalization	[7] Weight in Index	[8] Estimated Dividend Yield	[9] Cap-Weighted Dividend Yield	[10] Bloomberg Long-Term Growth Est.	[11] Cap-Weighted Long-Term Growth Est.
Axon Enterprise Inc	AXON	76.623	525.95	40,300.01				27.80%	
Dayforce Inc	DAY	158.262	58.33	9,231.44					
Carrier Global Corp	CARR	863.988	63.4	54,776.81	0.16%	0.014195584	0.00%	13.57%	0.02%
Bank of New York Mellon Corp/The	BK	717.974	83.87	60,216.47	0.17%	0.022415643	0.00%	12.56%	0.02%
Otis Worldwide Corp	OTIS	396.519	103.2	40,920.72		0.015116279			
Baxter International Inc	BAX	512.924	34.23	17,557.39	0.05%	0.019865615	0.00%	14.67%	0.01%
Becton Dickinson & Co	BDX	287.135	229.06	65,771.24	0.19%	0.01816118	0.00%	9.31%	0.02%
Berkshire Hathaway Inc	BRK/B	1339.906	532.58	713,606.95					
Best Buy Co Inc	BBY	211.370	73.61	15,558.92	0.04%	0.051623421	0.00%	5.78%	0.00%
Boston Scientific Corp	BSX	1479.070	100.88	149,208.60	0.43%			12.77%	0.05%
Bristol-Myers Squibb Co	BMY	2034.763	60.99	124,100.21		0.040662404		82.16%	
Brown-Forman Corp	BF/B	303.540	33.94	10,302.15		0.026694166		-2.71%	
Coterra Energy Inc	CTRA	764.096	28.9	22,082.38	0.06%	0.030449827	0.00%	15.54%	0.01%
Hilton Worldwide Holdings Inc	HLT	239.614	227.55	54,524.17	0.16%	0.002636783	0.00%	13.66%	0.02%
Carnival Corp	CCL	1166.607	19.53	22,783.83				25.25%	
Builders FirstSource Inc	BLDR	113.621	124.94	14,195.85	0.04%			8.55%	0.00%
UDR Inc	UDR	331.133	45.17	14,957.29	0.04%	0.038078371	0.00%	1.98%	0.00%
Clorox Co/The	CLX	123.190	147.25	18,139.71	0.05%	0.033140917	0.00%	8.97%	0.00%
Paycom Software Inc	PAYC	57.265	218.48	12,511.20	0.04%	0.006865617	0.00%	7.82%	0.00%
CMS Energy Corp	CMS	299.115	75.11	22,466.50	0.06%	0.02889096	0.00%	7.64%	0.00%
Colgate-Palmolive Co	CL	811.084	93.7	75,998.60	0.22%	0.022198506	0.00%	5.69%	0.01%
EPAM Systems Inc	EPAM	56.888	168.84	9,604.99					
Conagra Brands Inc	CAG	477.320	26.67	12,730.14		0.052493438		-3.22%	
Airbnb Inc	ABNB	440.002	119.46	52,562.65	0.15%			10.66%	0.02%
Consolidated Edison Inc	ED	353.072	110.59	39,046.20	0.11%	0.03074419	0.00%	4.89%	0.01%
Corning Inc	GLW	856.777	45.78	39,223.25	0.11%	0.024464832	0.00%	17.92%	0.02%
GoDaddy Inc	GDDY	141.356	180.14	25,463.85					
Cummins Inc	CMI	137.481	313.44	43,092.09	0.12%	0.023226136	0.00%	10.37%	0.01%
Caesars Entertainment Inc	CZR	212.013	25	5,300.33				51.64%	
Danaher Corp	DHR	715.450	205	146,667.31	0.42%	0.006243902	0.00%	8.67%	0.04%
Target Corp	TGT	455.576	104.36	47,543.96	0.14%	0.042928325	0.01%	11.25%	0.02%
Williams-Sonoma Inc	WSM	123.510	158.1	19,526.85	0.06%	0.016698292	0.00%	4.50%	0.00%
Deere & Co	DE	271.414	469.35	127,388.13	0.37%	0.013806328	0.01%	0.48%	0.00%
Dominion Energy Inc	D	852.215	56.07	47,783.71		0.047619048		23.10%	
Dover Corp	DOV	137.062	175.68	24,079.10	0.07%	0.011725865	0.00%	10.22%	0.01%
Alliant Energy Corp	LNT	256.692	64.35	16,518.15	0.05%	0.031546232	0.00%	6.14%	0.00%
Steel Dynamics Inc	STLD	149.897	125.08	18,749.09	0.05%	0.015989767	0.00%	14.29%	0.01%
Duke Energy Corp	DUK	777.022	121.97	94,773.33	0.27%	0.034270722	0.01%	7.90%	0.02%
Regency Centers Corp	REG	181.526	73.76	13,389.35	0.04%	0.038232104	0.00%	4.59%	0.00%
Eaton Corp PLC	ETN	391.769	271.83	106,494.67	0.31%	0.015303682	0.00%	11.73%	0.04%
Ecolab Inc	ECL	283.633	253.52	71,906.52	0.21%	0.010255601	0.00%	12.49%	0.03%
Revvity Inc	RVTY	120.147	105.8	12,711.58	0.04%	0.002646503	0.00%	8.81%	0.00%
Dell Technologies Inc	DELL	358.710	91.15	32,696.45	0.09%	0.023038947	0.00%	12.40%	0.01%
Emerson Electric Co	EMR	563.900	109.64	61,826.00	0.18%	0.019244801	0.00%	8.28%	0.01%
EOG Resources Inc	EOG	551.544	128.24	70,730.05		0.030411728		-3.30%	
Aon PLC	AON	216.001	399.09	86,203.88	0.25%	0.006765391	0.00%	10.68%	0.03%
Entergy Corp	ETR	446.341	85.49	38,157.68	0.11%	0.028073459	0.00%	7.73%	0.01%
Equifax Inc	EFX	124.799	243.56	30,395.97		0.006404993			
EQT Corp	EQT	597.441	53.43	31,921.27		0.011791129			
IQVIA Holdings Inc	IQV	176.315	176.3	31,084.34	0.09%			8.80%	0.01%
Gartner Inc	IT	76.818	419.74	32,243.67					
FedEx Corp	FDX	239.599	243.78	58,409.42	0.17%	0.022643367	0.00%	11.22%	0.02%
Brown & Brown Inc	BRO	286.628	124.4	35,656.47	0.10%	0.004823151	0.00%	9.12%	0.01%
Ford Motor Co	F	3905.695	10.03	39,174.12	0.11%	0.014955135	0.00%	0.18%	0.00%
NextEra Energy Inc	NEE	2057.026	70.89	145,822.59	0.42%	0.031965016	0.01%	7.09%	0.03%
Franklin Resources Inc	BEN	525.398	19.25	10,113.91		0.066493506			
Garmin Ltd	GRMN	192.404	217.13	41,776.63		0.016579929			
Freeport-McMoRan Inc	FCX	1437.073	37.86	54,407.58	0.16%	0.015847861	0.00%	14.30%	0.02%
Expand Energy Corp	EXE	232.700	111.32	25,904.16		0.020661157		-29.49%	
Dexcom Inc	DXCM	392.108	68.29	26,777.02	0.08%			19.18%	0.01%
General Dynamics Corp	GD	268.382	272.58	73,155.52	0.21%	0.022011886	0.00%	13.45%	0.03%
General Mills Inc	GIS	547.601	59.79	32,741.04		0.040140492		-2.42%	
Genuine Parts Co	GPC	138.782	119.14	16,534.49		0.034581165			
Atmos Energy Corp	ATO	158.728	154.58	24,536.21	0.07%	0.022512615	0.00%	7.27%	0.01%
WW Grainger Inc	GWW	48.171	987.83	47,585.18	0.14%	0.008301023	0.00%	5.85%	0.01%
Halliburton Co	HAL	868.092	25.37	22,023.48		0.026803311		-2.16%	
L3Harris Technologies Inc	LHX	187.716	209.31	39,290.91	0.11%	0.022932492	0.00%	12.47%	0.01%
Healthpeak Properties Inc	DOC	698.596	20.22	14,125.61	0.04%	0.060336301	0.00%	4.91%	0.00%
Insulet Corp	PODD	70.226	262.61	18,442.08				24.42%	
Fortive Corp	FTV	340.290	73.18	24,902.43	0.07%	0.004372779	0.00%	7.56%	0.01%
Hershey Co/The	HSY	147.949	171.03	25,303.80		0.032041162		-9.26%	
Synchrony Financial	SYF	388.749	52.94	20,580.40	0.06%	0.018889309	0.00%	14.88%	0.01%
Hormel Foods Corp	HRL	549.913	30.94	17,014.29	0.05%	0.03749192	0.00%	7.27%	0.00%
Arthur J Gallagher & Co	AJG	255.735	345.24	88,289.88		0.007530993			
Mondelez International Inc	MDLZ	1293.525	67.85	87,765.68	0.25%	0.02770818	0.01%	0.40%	0.00%
CenterPoint Energy Inc	CNP	652.727	36.23	23,648.29	0.07%	0.024289263	0.00%	8.15%	0.01%
Humana Inc	HUM	120.693	264.6	31,935.27	0.09%	0.013378685	0.00%	6.50%	0.01%
Willis Towers Watson PLC	WTW	99.381	337.95	33,585.75	0.10%	0.010889185	0.00%	7.49%	0.01%
Illinois Tool Works Inc	ITW	293.366	248.01	72,757.70	0.21%	0.024192573	0.01%	1.21%	0.00%
CDW Corp/DE	CDW	132.492	160.26	21,233.21	0.06%	0.015599651	0.00%	6.38%	0.00%
Trane Technologies PLC	TT	224.291	336.92	75,568.11	0.22%	0.011159919	0.00%	9.97%	0.02%
Interpublic Group of Cos Inc/The	IPG	372.649	27.16	10,121.15		0.048600884			

Name	Ticker	[4] Shares Outst'g	[5] Price	[6] Market Capitalization	[7] Weight in Index	[8] Estimated Dividend Yield	[9] Cap-Weighted Dividend Yield	[10] Bloomberg Long-Term Growth Est.	[11] Cap-Weighted Long-Term Growth Est.
International Flavors & Fragrances Inc	IFF	255.735	77.61	19,847.59	0.06%	0.0206159	0.00%	7.72%	0.00%
Generac Holdings Inc	GNRC	59.614	126.65	7,550.12	0.02%			19.45%	0.00%
NXP Semiconductors NV	NXPI	253.620	190.06	48,203.04	0.14%	0.021340629	0.00%	4.62%	0.01%
Kellanova	K	345.216	82.49	28,476.86	0.08%	0.027639714	0.00%	4.55%	0.00%
Broadridge Financial Solutions Inc	BR	117.019	242.46	28,372.35		0.014517859			
Kimberly-Clark Corp	KMB	331.652	142.22	47,167.51	0.14%	0.035438054	0.00%	3.87%	0.01%
Kimco Realty Corp	KIM	679.499	21.24	14,432.55	0.04%	0.047080979	0.00%	3.40%	0.00%
Oracle Corp	ORCL	2804.234	139.81	392,059.96	1.13%	0.014305128	0.02%	8.75%	0.10%
Kroger Co/The	KR	723.606	67.69	48,980.90	0.14%	0.018909736	0.00%	6.11%	0.01%
Lennar Corp	LEN	232.685	114.78	26,707.63		0.017424638		-1.58%	
Eli Lilly & Co	LLY	947.989	825.91	782,953.72	2.25%	0.007264714	0.02%	20.00%	0.45%
Charter Communications Inc	CHTR	142.014	368.53	52,336.49	0.15%			18.16%	0.03%
Loews Corp	L	212.861	91.91	19,564.08		0.002720052			
Lowe's Cos Inc	LOW	559.707	233.23	130,540.36	0.38%	0.01972302	0.01%	6.05%	0.02%
Hubbell Inc	HUBB	53.573	330.91	17,727.96		0.015956			
IDEX Corp	IEX	75.544	180.97	13,671.22		0.015251147			
Marsh & McLennan Cos Inc	MMC	492.903	244.03	120,283.15	0.35%	0.013359013	0.00%	8.55%	0.03%
Masco Corp	MAS	211.652	69.54	14,718.30	0.04%	0.017831464	0.00%	9.14%	0.00%
S&P Global Inc	SPGI	313.840	508.1	159,462.14		0.007557567			
Medtronic PLC	MDT	1282.544	89.86	115,249.36	0.33%	0.031159582	0.01%	6.49%	0.02%
Viatris Inc	VTRS	1193.689	8.71	10,397.03		0.05510907		-3.79%	
CVS Health Corp	CVS	1260.795	67.75	85,418.87	0.25%	0.039261993	0.01%	14.47%	0.04%
DuPont de Nemours Inc	DD	418.049	74.68	31,219.91	0.09%	0.021960364	0.00%	8.02%	0.01%
Micron Technology Inc	MU	1117.572	86.89	97,105.79		0.00529405		86.81%	
Motorola Solutions Inc	MSI	166.964	437.81	73,098.31	0.21%	0.009958658	0.00%	7.04%	0.01%
Cboe Global Markets Inc	CBOE	104.702	226.29	23,692.95	0.07%	0.011136153	0.00%	13.35%	0.01%
Newmont Corp	NEM	1127.258	48.28	54,423.99		0.02071251		-4.72%	
NIKE Inc	NKE	1181.239	63.48	74,985.06		0.025204789		-7.00%	
NiSource Inc	NI	470.605	40.09	18,866.57		0.027937141			
Norfolk Southern Corp	NSC	246.558	236.85	58,397.28	0.17%	0.02279924	0.00%	11.89%	0.02%
Principal Financial Group Inc	PFG	225.571	84.37	19,031.45	0.05%	0.035557663	0.00%	13.66%	0.01%
Eversource Energy	ES	367.082	62.11	22,799.46	0.07%	0.048462405	0.00%	4.42%	0.00%
Northrop Grumman Corp	NOC	144.756	512.01	74,116.35	0.21%	0.016093436	0.00%	5.70%	0.01%
Wells Fargo & Co	WFC	3265.159	71.79	234,405.75	0.67%	0.022287227	0.02%	16.95%	0.11%
Nucor Corp	NUE	230.746	120.34	27,767.99	0.08%	0.018281536	0.00%	19.06%	0.02%
Occidental Petroleum Corp	OXY	939.783	49.36	46,387.67		0.019448947			
Omnicom Group Inc	OMC	196.556	82.91	16,296.48	0.05%	0.03377156	0.00%	5.45%	0.00%
ONEOK Inc	OKE	624.340	99.22	61,946.97		0.041523886			
Raymond James Financial Inc	RJF	204.910	138.4101	28,361.62	0.08%	0.014449813	0.00%	15.42%	0.01%
PG&E Corp	PCG	2193.577	17.18	37,685.65		0.005820722			
Parker-Hannifin Corp	PH	128.765	607.85	78,269.71	0.23%	0.010726331	0.00%	7.54%	0.02%
Rollins Inc	ROL	485.076	54.03	26,208.64		0.012215436			
PPL Corp	PPL	738.294	36.11	26,659.80		0.030185544			
Aptiv PLC	APTV	229.446	59.5	13,652.06	0.04%			15.17%	0.01%
ConocoPhillips	COP	1264.165	105.02	132,762.65	0.38%	0.029708627	0.01%	4.50%	0.02%
PulteGroup Inc	PHM	201.585	102.8	20,722.98	0.06%	0.008560311	0.00%	0.98%	0.00%
Pinnacle West Capital Corp	PNW	119.244	95.25	11,357.94	0.03%	0.037585302	0.00%	2.12%	0.00%
PNC Financial Services Group Inc/The	PNC	395.750	175.77	69,560.90	0.20%	0.036411219	0.01%	8.09%	0.02%
PPG Industries Inc	PPG	226.975	109.35	24,819.71	0.07%	0.024874257	0.00%	7.69%	0.01%
DoorDash Inc	DASH	394.485	182.77	72,100.03					
Progressive Corp/The	PGR	586.236	283.01	165,910.68	0.48%	0.001413378	0.00%	14.79%	0.07%
Veralto Corp	VLTO	248.052	97.45	24,172.64		0.004515136			
Public Service Enterprise Group Inc	PEG	498.561	82.3	41,031.61	0.12%	0.030619684	0.00%	9.40%	0.01%
Cooper Cos Inc/The	COO	199.981	84.35	16,868.41	0.05%			9.91%	0.00%
Edison International	EIX	385.024	58.92	22,685.59		0.056177868			
Schlumberger NV	SLB	1359.855	41.8	56,841.95	0.16%	0.027272727	0.00%	1.25%	0.00%
Charles Schwab Corp/The	SCHW	1813.568	78.28	141,966.08		0.013796627			
Sherwin-Williams Co/The	SHW	251.510	349.19	87,824.83	0.25%	0.009049515	0.00%	6.20%	0.02%
West Pharmaceutical Services Inc	WST	72.293	223.88	16,184.90	0.05%	0.00375201	0.00%	5.83%	0.00%
J M Smucker Co/The	SJM	106.417	118.41	12,600.79		0.036483405			
Snap-on Inc	SNA	52.418	337.01	17,665.31	0.05%	0.02539984	0.00%	4.26%	0.00%
AMETEK Inc	AME	230.747	172.14	39,720.77	0.11%	0.007203439	0.00%	8.60%	0.01%
Uber Technologies Inc	UBER	2091.258	72.86	152,369.07				-6.02%	
Southern Co/The	SO	1094.633	91.95	100,651.54	0.29%	0.03132137	0.01%	6.37%	0.02%
Truist Financial Corp	TFC	1305.391	41.15	53,716.83	0.15%	0.05054678	0.01%	8.22%	0.01%
Southwest Airlines Co	LUV	592.661	33.58	19,901.56		0.021441334		50.33%	
W R Berkley Corp	WRB	379.226	71.16	26,985.73	0.08%	0.004496908	0.00%	8.92%	0.01%
Stanley Black & Decker Inc	SWK	154.538	76.88	11,880.84		0.042663892			
Public Storage	PSA	175.416	299.29	52,500.11		0.040094891			
Arista Networks Inc	ANET	1261.123	77.48	97,711.78	0.28%			14.64%	0.04%
Sysco Corp	SYY	489.230	75.04	36,711.79		0.027185501			
Corteva Inc	CTVA	683.015	62.93	42,982.11	0.12%	0.010805657	0.00%	15.89%	0.02%
Texas Instruments Inc	TXN	909.918	179.7	163,512.23	0.47%	0.030272677	0.01%	12.68%	0.06%
Textron Inc	TXT	181.621	72.25	13,122.11	0.04%	0.001107266	0.00%	10.03%	0.00%
Thermo Fisher Scientific Inc	TMO	377.261	497.6	187,725.16	0.54%	0.003456592	0.00%	9.24%	0.05%
TJX Cos Inc/The	TJX	1124.158	121.8	136,922.45	0.39%	0.013957307	0.01%	7.62%	0.03%
Globe Life Inc	GL	83.243	131.72	10,964.74		0.00819921			
Johnson Controls International plc	JCI	660.139	80.11	52,883.75	0.15%	0.018474597	0.00%	9.69%	0.01%
Ulta Beauty Inc	ULTA	45.309	366.54	16,607.74	0.05%			3.98%	0.00%
Union Pacific Corp	UNP	599.318	236.24	141,582.93	0.41%	0.022688791	0.01%	9.95%	0.04%
Keysight Technologies Inc	KEYS	172.811	149.77	25,881.83	0.07%			12.64%	0.01%
UnitedHealth Group Inc	UNH	914.712	523.75	479,080.58	1.38%	0.016038186	0.02%	11.45%	0.16%

Name	Ticker	[4] Shares Outst'g	[5] Price	[6] Market Capitalization	[7] Weight in Index	[8] Estimated Dividend Yield	[9] Cap-Weighted Dividend Yield	[10] Bloomberg Long-Term Growth Est.	[11] Cap-Weighted Long-Term Growth Est.
Blackstone Inc	BX	729.416	139.78	101,957.76		0.041207612		24.94%	
Ventas Inc	VTR	437.617	68.76	30,090.52	0.09%	0.027923211	0.00%	9.17%	0.01%
Labcorp Holdings Inc	LH	83.700	232.74	19,480.34	0.06%	0.012374323	0.00%	10.01%	0.01%
Vulcan Materials Co	VMC	132.101	233.3	30,819.21	0.09%	0.0084012	0.00%	13.04%	0.01%
Weyerhaeuser Co	WY	725.849	29.28	21,252.86	0.06%	0.028688525	0.00%	8.13%	0.00%
Williams Cos Inc/The	WMB	1220.687	59.76	72,948.24		0.033467202			
Constellation Energy Corp	CEG	315.121	201.63	63,537.84	0.18%	0.0076933	0.00%	12.12%	0.02%
WEC Energy Group Inc	WEC	315.821	108.98	34,418.15	0.10%	0.032758304	0.00%	7.53%	0.01%
Adobe Inc	ADBE	426.200	383.53	163,460.49	0.47%			13.63%	0.06%
Vistra Corp	VST	340.157	117.44	39,948.05		0.007612398		-5.61%	
AES Corp/The	AES	711.901	12.42	8,841.80	0.03%	0.056666667	0.00%	3.32%	0.00%
Expeditors International of Washington Inc	EXPD	137.757	120.25	16,565.24	0.05%	0.012141372	0.00%	4.35%	0.00%
Amgen Inc	AMGN	537.205	311.55	167,366.20	0.48%	0.030556893	0.01%	6.91%	0.03%
Apple Inc	AAPL	15022.073	222.13	3,336,853.08	9.60%	0.004501868	0.04%	14.47%	1.39%
Autodesk Inc	ADSK	213.000	261.8	55,763.40	0.16%			14.19%	0.02%
Cintas Corp	CTAS	403.544	205.53	82,940.38		0.007590133			
Comcast Corp	CMCSA	3771.578	36.9	139,171.24	0.40%	0.035772358	0.01%	4.62%	0.02%
Molson Coors Beverage Co	TAP	190.158	60.87	11,574.92	0.03%	0.030885494	0.00%	8.44%	0.00%
KLA Corp	KLAC	132.887	679.8	90,336.41	0.26%	0.010002942	0.00%	15.45%	0.04%
Marriott International Inc/MD	MAR	275.373	238.2	65,593.80	0.19%	0.010579345	0.00%	10.85%	0.02%
Fiserv Inc	FI	561.289	220.83	123,949.44	0.36%			15.74%	0.06%
McCormick & Co Inc/MD	MKC	252.682	82.31	20,798.23	0.06%	0.021868546	0.00%	6.37%	0.00%
PACCAR Inc	PCAR	524.935	97.37	51,112.90	0.15%	0.013556537	0.00%	6.90%	0.01%
Costco Wholesale Corp	COST	443.683	945.78	419,626.85	1.21%	0.004906004	0.01%	8.86%	0.11%
Stryker Corp	SYK	381.689	372.25	142,083.67	0.41%	0.009026192	0.00%	9.83%	0.04%
Tyson Foods Inc	TSN	286.185	63.81	18,261.49		0.03134305		21.06%	
Lamb Weston Holdings Inc	LW	142.641	53.3	7,602.75		0.027767355		-11.26%	
Applied Materials Inc	AMAT	812.441	145.12	117,901.42	0.34%	0.012679162	0.00%	10.64%	0.04%
Cardinal Health Inc	CAH	241.568	137.2644	33,158.69	0.10%	0.014733609	0.00%	9.07%	0.01%
Cincinnati Financial Corp	CINF	156.565	147.72	23,127.74	0.07%	0.023558083	0.00%	2.85%	0.00%
Paramount Global	PARA	630.008	11.96	7,534.89		0.016722408			
DR Horton Inc	DHI	315.122	127.13	40,061.52	0.12%	0.012585542	0.00%	7.26%	0.01%
Electronic Arts Inc	EA	260.618	144.52	37,664.45	0.11%	0.005258788	0.00%	5.98%	0.01%
Erie Indemnity Co	ERIE	46.189	419.05	19,355.53		0.013029471			
Fair Isaac Corp	FICO	24.418	1844.16	45,030.96					
Fastenal Co	FAST	573.451	77.55	44,471.13	0.13%	0.022179239	0.00%	10.52%	0.01%
M&T Bank Corp	MTB	164.290	178.75	29,366.90	0.08%	0.03020979	0.00%	11.88%	0.01%
Xcel Energy Inc	XEL	574.553	70.79	40,672.58		0.032207939			
Fifth Third Bancorp	FITB	668.099	39.2	26,189.48		0.037755102			
Gilead Sciences Inc	GILD	1245.163	112.05	139,520.49		0.028201696		21.66%	
Hasbro Inc	HAS	139.531	61.49	8,579.78	0.02%	0.045535859	0.00%	6.73%	0.00%
Huntington Bancshares Inc/OH	HBAN	1460.754	15.01	21,925.92	0.06%	0.041305796	0.00%	12.50%	0.01%
Welltower Inc	WELL	641.308	153.21	98,254.81	0.28%	0.017492331	0.00%	16.50%	0.05%
Biogen Inc	BIIB	146.375	136.84	20,029.95					
Northern Trust Corp	NTRS	194.972	98.65	19,233.95	0.06%	0.030410542	0.00%	8.91%	0.00%
Packaging Corp of America	PKG	89.928	198.02	17,807.57		0.025249975			
Paychex Inc	PAYX	360.191	154.28	55,570.22	0.16%	0.025408348	0.00%	6.24%	0.01%
QUALCOMM Inc	QCOM	1106.000	153.61	169,892.66	0.49%	0.022133976	0.01%	15.26%	0.07%
Ross Stores Inc	ROST	329.929	127.79	42,161.65	0.12%	0.012677048	0.00%	6.48%	0.01%
IDEXX Laboratories Inc	IDXX	81.039	419.95	34,032.34	0.10%			12.27%	0.01%
Starbucks Corp	SBUX	1135.900	98.09	111,420.43	0.32%	0.024875115	0.01%	9.20%	0.03%
KeyCorp	KEY	1095.717	15.99	17,520.52	0.05%	0.051282051	0.00%	18.11%	0.01%
Fox Corp	FOXA	217.847	56.6	12,330.13	0.04%	0.009540636	0.00%	8.98%	0.00%
Fox Corp	FOX	235.581	52.71	12,417.48	0.04%	0.010244735	0.00%	8.98%	0.00%
State Street Corp	STT	288.469	88.77	25,607.40	0.07%	0.034245804	0.00%	10.32%	0.01%
Norwegian Cruise Line Holdings Ltd	NCLH	439.945	18.96	8,341.35	0.02%			18.95%	0.00%
US Bancorp	USB	1558.011	42.22	65,779.20	0.19%	0.047370914	0.01%	9.30%	0.02%
A O Smith Corp	AOS	117.659	65.36	7,690.19		0.020807834			
Gen Digital Inc	GEN	616.301	26.54	16,356.64	0.05%	0.018839488	0.00%	11.23%	0.01%
T Rowe Price Group Inc	TROW	222.242	91.87	20,417.41		0.055295526			
Waste Management Inc	WM	402.115	231.51	93,093.75	0.27%	0.014254244	0.00%	10.93%	0.03%
Constellation Brands Inc	STZ	180.705	183.52	33,162.90	0.10%	0.022013949	0.00%	8.23%	0.01%
Invesco Ltd	IVZ	447.414	15.17	6,787.26	0.02%	0.054054054	0.00%	12.05%	0.00%
Intuit Inc	INTU	279.562	613.99	171,648.27	0.49%	0.006775355	0.00%	13.97%	0.07%
Morgan Stanley	MS	1612.856	116.67	188,171.86	0.54%	0.03171338	0.02%	11.82%	0.06%
Microchip Technology Inc	MCHP	537.819	48.41	26,035.82		0.037595538		-33.30%	
Crowdstrike Holdings Inc	CRWD	247.873	352.58	87,395.21				24.67%	
Chubb Ltd	CB	400.412	301.99	120,920.44	0.35%	0.012053379	0.00%	3.77%	0.01%
Hologic Inc	HOLX	225.723	61.77	13,942.92	0.04%			9.04%	0.00%
Citizens Financial Group Inc	CFG	437.134	40.97	17,909.38		0.041005614		21.23%	
Jabil Inc	JBL	109.179	136.07	14,855.92	0.04%	0.002351731	0.00%	12.83%	0.01%
O'Reilly Automotive Inc	ORLY	57.241	1432.58	82,001.61	0.24%			10.30%	0.02%
Allstate Corp/The	ALL	265.026	207.07	54,878.94	0.16%	0.019317139	0.00%	12.65%	0.02%
Equity Residential	EQR	379.705	71.58	27,179.30	0.08%	0.03869796	0.00%	4.03%	0.00%
Keurig Dr Pepper Inc	KDP	1356.751	34.22	46,428.02	0.13%	0.026884863	0.00%	6.20%	0.01%
Host Hotels & Resorts Inc	HST	699.107	14.21	9,934.31		0.056298381		-0.80%	
Incyte Corp	INCY	193.524	60.55	11,717.90					
Simon Property Group Inc	SPG	326.243	166.08	54,182.51	0.16%	0.050578035	0.01%	1.29%	0.00%
Eastman Chemical Co	EMN	115.460	88.11	10,173.17	0.03%	0.037680173	0.00%	10.17%	0.00%
AvalonBay Communities Inc	AVB	142.255	214.62	30,530.72	0.09%	0.032615786	0.00%	5.26%	0.00%
Prudential Financial Inc	PRU	354.427	111.68	39,582.42	0.11%	0.048352436	0.01%	7.89%	0.01%
United Parcel Service Inc	UPS	733.482	109.99	80,675.67	0.23%	0.059641786	0.01%	7.91%	0.02%

Name	Ticker	[4] Shares Outst'g	[5] Price	[6] Market Capitalization	[7] Weight in Index	[8] Estimated Dividend Yield	[9] Cap-Weighted Dividend Yield	[10] Bloomberg Long-Term Growth Est.	[11] Cap-Weighted Long-Term Growth Est.
Walgreens Boots Alliance Inc	WBA	864.735	11.17	9,659.09				-21.88%	
STERIS PLC	STE	98.251	226.65	22,268.54		0.010059563			
McKesson Corp	MCK	125.326	672.99	84,343.40	0.24%	0.004219974	0.00%	13.47%	0.03%
Lockheed Martin Corp	LMT	234.573	446.71	104,786.13	0.30%	0.029549372	0.01%	11.65%	0.04%
Cencora Inc	COR	193.713	278.09	53,869.53	0.16%	0.007911108	0.00%	9.83%	0.02%
Capital One Financial Corp	COF	381.479	179.3	68,395.27	0.20%	0.013385388	0.00%	14.58%	0.03%
The Campbell's Company	CPB	298.182	39.92	11,903.42	0.03%	0.039078156	0.00%	2.22%	0.00%
Waters Corp	WAT	59.411	368.57	21,897.09	0.06%			7.42%	0.00%
Nordson Corp	NDSN	56.912	201.72	11,480.24		0.015466984			
Dollar Tree Inc	DLTR	215.083	75.07	16,146.28	0.05%			7.94%	0.00%
Darden Restaurants Inc	DRI	117.147	207.76	24,338.42	0.07%	0.026954178	0.00%	9.10%	0.01%
Evergy Inc	EVRG	229.746	68.95	15,840.98	0.05%	0.038723713	0.00%	5.71%	0.00%
Match Group Inc	MTCH	250.429	31.2	7,813.39		0.024358974			
NVR Inc	NVR	2.969	7244.39	21,508.67	0.06%			6.01%	0.00%
NetApp Inc	NTAP	203.412	87.84	17,867.67	0.05%	0.023679417	0.00%	8.16%	0.00%
Old Dominion Freight Line Inc	ODFL	212.545	165.45	35,165.58	0.10%	0.006769417	0.00%	9.27%	0.01%
DaVita Inc	DVA	80.000	152.97	12,237.60	0.04%			10.03%	0.00%
Hartford Insurance Group Inc/The	HIG	285.387	123.73	35,310.93	0.10%	0.016810798	0.00%	8.76%	0.01%
Iron Mountain Inc	IRM	293.741	86.04	25,273.47		0.036494654			
Estee Lauder Cos Inc/The	EL	234.173	66	15,455.45	0.04%	0.021212121	0.00%	8.85%	0.00%
Cadence Design Systems Inc	CDNS	274.314	254.33	69,766.18	0.20%			14.79%	0.03%
Tyler Technologies Inc	TYL	43.106	581.39	25,061.41					
Universal Health Services Inc	UHS	57.751	187.9	10,851.45	0.03%	0.004257584	0.00%	11.19%	0.00%
Skyworks Solutions Inc	SWKS	153.575	64.63	9,925.54		0.043323534		-9.02%	
Quest Diagnostics Inc	DGX	110.978	169.2	18,777.49	0.05%	0.01891253	0.00%	9.07%	0.00%
Rockwell Automation Inc	ROK	113.073	258.38	29,215.79	0.08%	0.020280207	0.00%	12.57%	0.01%
Kraft Heinz Co/The	KHC	1193.398	30.43	36,315.11		0.052579691		-3.61%	
American Tower Corp	AMT	467.457	217.6	101,718.70		0.03125		23.12%	
Regeneron Pharmaceuticals Inc	REGN	107.508	634.23	68,184.51	0.20%	0.005550037	0.00%	2.86%	0.01%
Amazon.com Inc	AMZN	10597.729	190.26	2,016,323.99	5.80%			13.61%	0.79%
Jack Henry & Associates Inc	JKHY	72.898	182.6	13,311.11	0.04%	0.012705367	0.00%	9.25%	0.00%
Ralph Lauren Corp	RL	39.883	220.74	8,803.76	0.03%	0.014949715	0.00%	13.79%	0.00%
BXP Inc	BXP	158.210	67.19	10,630.10	0.03%	0.058342015	0.00%	1.55%	0.00%
Amphenol Corp	APH	1211.783	65.59	79,480.87	0.23%	0.01006251	0.00%	15.74%	0.04%
Howmet Aerospace Inc	HWM	405.023	129.73	52,543.57	0.15%	0.003083327	0.00%	12.69%	0.02%
Valero Energy Corp	VLO	314.461	132.07	41,530.82		0.034224275			
Synopsys Inc	SNPS	154.620	428.85	66,308.82	0.19%			13.35%	0.03%
CH Robinson Worldwide Inc	CHRW	118.258	102.4	12,109.57	0.03%	0.02421875	0.00%	16.60%	0.01%
Accenture PLC	ACN	625.480	312.04	195,174.76	0.56%	0.018971927	0.01%	7.12%	0.04%
TransDigm Group Inc	TDG	56.085	1383.29	77,581.25	0.22%			13.51%	0.03%
Yum! Brands Inc	YUM	279.102	157.36	43,919.48	0.13%	0.018047789	0.00%	10.30%	0.01%
Prologis Inc	PLD	926.175	111.79	103,537.10	0.30%	0.03613919	0.01%	6.63%	0.02%
FirstEnergy Corp	FE	576.697	40.42	23,310.11	0.07%	0.044037605	0.00%	3.61%	0.00%
VeriSign Inc	VRSN	94.600	253.87	24,016.10					
Quanta Services Inc	PWR	148.198	254.18	37,669.05	0.11%	0.001573688	0.00%	13.20%	0.01%
Henry Schein Inc	HSIC	124.177	68.49	8,504.87	0.02%			5.92%	0.00%
Ameren Corp	AEE	270.158	100.4	27,123.83		0.028286853			
ANSYS Inc	ANSS	87.652	316.56	27,747.05					
FactSet Research Systems Inc	FDS	38.030	454.64	17,289.98		0.009150097			
NVIDIA Corp	NVDA	24400.000	108.38	2,644,472.00		0.000369072		31.31%	
Cognizant Technology Solutions Corp	CTSH	494.616	76.5	37,838.09	0.11%	0.01620915	0.00%	6.14%	0.01%
Intuitive Surgical Inc	ISRG	358.275	495.27	177,442.65	0.51%			16.58%	0.08%
Take-Two Interactive Software Inc	TTWO	176.496	207.25	36,578.74				60.65%	
Republic Services Inc	RSG	312.285	242.16	75,622.92	0.22%	0.009580443	0.00%	8.71%	0.02%
eBay Inc	EBAY	466.000	67.73	31,562.18	0.09%	0.017126827	0.00%	7.84%	0.01%
Goldman Sachs Group Inc/The	GS	310.790	546.29	169,781.68	0.49%	0.021966355	0.01%	9.26%	0.05%
SBA Communications Corp	SBAC	107.615	220.01	23,676.43	0.07%	0.020180901	0.00%	7.17%	0.00%
Sempra	SRE	651.913	71.36	46,520.54	0.13%	0.036154709	0.00%	7.02%	0.01%
Moody's Corp	MCO	179.889	465.69	83,772.66		0.008074041			
ON Semiconductor Corp	ON	421.421	40.69	17,147.63				-0.17%	
Booking Holdings Inc	BKNG	32.815	4606.91	151,176.67	0.44%	0.008335305	0.00%	15.92%	0.07%
F5 Inc	FFIV	57.652	266.27	15,351.07	0.04%			7.07%	0.00%
Akamai Technologies Inc	AKAM	150.387	80.5	12,106.19					
Charles River Laboratories International Inc	CRL	51.142	150.52	7,697.84	0.02%			3.82%	0.00%
MarketAxess Holdings Inc	MKTX	37.693	216.35	8,154.93	0.02%	0.014051306	0.00%	1.36%	0.00%
Devon Energy Corp	DVN	649.000	37.4	24,272.60		0.025668449		-5.51%	
Bio-Techne Corp	TECH	158.088	58.63	9,268.68		0.005457957			
Alphabet Inc	GOOGL	5833.000	154.64	902,015.12	2.60%	0.005173306	0.01%	12.25%	0.32%
Allegion plc	ALLE	86.290	130.46	11,257.44	0.03%	0.015636977	0.00%	4.12%	0.00%
Netflix Inc	NFLX	427.757	932.53	398,896.33				22.93%	
Agilent Technologies Inc	A	285.103	116.732	33,280.61	0.10%	0.008498098	0.00%	8.80%	0.01%
Warner Bros Discovery Inc	WBD	2454.764	10.73	26,339.62				41.11%	
Trimble Inc	TRMB	245.792	65.65	16,136.25					
Elevance Health Inc	ELV	226.387	434.96	98,469.26	0.28%	0.015725584	0.00%	9.93%	0.03%
CME Group Inc	CME	360.380	265.29	95,605.10	0.28%	0.018847299	0.01%	3.60%	0.01%
Juniper Networks Inc	JNPR	333.190	36.19	12,058.14	0.03%	0.024316109	0.00%	12.36%	0.00%
DTE Energy Co	DTE	207.518	138.27	28,693.48	0.08%	0.031532509	0.00%	5.80%	0.00%
Nasdaq Inc	NDAQ	575.145	75.86	43,630.52	0.13%	0.012654891	0.00%	13.47%	0.02%
Philip Morris International Inc	PM	1556.488	158.73	247,061.37	0.71%	0.034020034	0.02%	10.11%	0.07%
Ingersoll Rand Inc	IR	403.083	80.03	32,258.75		0.000999625			
Salesforce Inc	CRM	961.000	268.36	257,893.96	0.74%	0.006200626	0.00%	12.53%	0.09%
Roper Technologies Inc	ROP	107.385	589.58	63,312.17		0.005597205			

Name	Ticker	[4] Shares Outst'g	[5] Price	[6] Market Capitalization	[7] Weight in Index	[8] Estimated Dividend Yield	[9] Cap-Weighted Dividend Yield	[10] Bloomberg Long-Term Growth Est.	[11] Cap-Weighted Long-Term Growth Est.
Huntington Ingalls Industries Inc	HII	39.236	204.04	8,005.63	0.02%	0.026465399	0.00%	13.85%	0.00%
MetLife Inc	MET	681.228	80.29	54,695.80	0.16%	0.027151576	0.00%	12.81%	0.02%
Tapestry Inc	TPR	207.015	70.41	14,575.96	0.04%	0.019883539	0.00%	9.55%	0.00%
CSX Corp	CSX	1884.745	29.43	55,468.06	0.16%	0.017669045	0.00%	8.69%	0.01%
Edwards Lifesciences Corp	EW	587.865	72.48	42,608.45					
Ameriprise Financial Inc	AMP	95.814	484.11	46,384.50	0.13%	0.012228626	0.00%	11.93%	0.02%
Zebra Technologies Corp	ZBRA	51.143	282.56	14,451.06					
Zimmer Biomet Holdings Inc	ZBH	199.063	113.18	22,529.97		0.008482064			
Camden Property Trust	CPT	108.799	122.3	13,306.14	0.04%	0.034341783	0.00%	1.25%	0.00%
CBRE Group Inc	CBRE	300.037	130.78	39,238.90					
Mastercard Inc	MA	904.890	548.12	495,988.04	1.43%	0.005546231	0.01%	13.27%	0.19%
CarMax Inc	KMX	153.800	77.92	11,984.09	0.03%			16.70%	0.01%
Intercontinental Exchange Inc	ICE	574.565	172.5	99,112.44	0.29%	0.011130435	0.00%	16.02%	0.05%
Fidelity National Information Services Inc	FIS	529.692	74.68	39,557.37	0.11%	0.021424746	0.00%	9.27%	0.01%
Smurfit WestRock PLC	SW	521.976	45.06	23,520.25		0.038242344		63.58%	
Chipotle Mexican Grill Inc	CMG	1355.337	50.21	68,051.47	0.20%			19.68%	0.04%
Wynn Resorts Ltd	WYNN	106.167	83.5	8,864.97	0.03%	0.011976048	0.00%	8.30%	0.00%
Live Nation Entertainment Inc	LYV	233.401	130.58	30,477.52	0.09%			12.10%	0.01%
Assurant Inc	AIZ	50.792	209.75	10,653.61		0.015256257			
NRG Energy Inc	NRG	203.667	95.46	19,442.05		0.018437042			
Monster Beverage Corp	MNST	973.159	58.52	56,949.26	0.16%			14.23%	0.02%
Regions Financial Corp	RF	905.465	21.73	19,675.76	0.06%	0.046019328	0.00%	5.90%	0.00%
Baker Hughes Co	BKR	990.350	43.95	43,525.86		0.020932878			
Mosaic Co/The	MOS	316.939	27.01	8,560.53		0.032580526		-8.84%	
Expedia Group Inc	EXPE	123.334	168.1	20,732.38	0.06%	0.009518144	0.00%	19.43%	0.01%
CF Industries Holdings Inc	CF	166.467	78.15	13,009.41		0.025591811		-6.30%	
APA Corp	APA	364.064	21.02	7,652.63		0.047573739		-13.72%	
Leidos Holdings Inc	LDOS	128.214	134.94	17,301.18	0.05%	0.011857122	0.00%	7.40%	0.00%
Alphabet Inc	GOOG	5497.000	156.23	858,796.31	2.47%	0.005120655	0.01%	12.25%	0.30%
TKO Group Holdings Inc	TKO	81.554	152.81	12,462.24		0.009946993			
First Solar Inc	FSLR	107.062	126.43	13,535.86				41.85%	
Discover Financial Services	DFS	251.604	170.7	42,948.82		0.016403046		-0.84%	
Visa Inc	V	1723.362	350.46	603,969.57	1.74%	0.006734007	0.01%	12.19%	0.21%
Mid-America Apartment Communities Inc	MAA	116.902	167.58	19,590.40	0.06%	0.036161833	0.00%	2.74%	0.00%
Xylem Inc/NY	XYL	243.349	119.46	29,070.53		0.013393605			
Marathon Petroleum Corp	MPC	311.531	145.69	45,387.00		0.024984556			
Tractor Supply Co	TSCO	531.615	55.1	29,292.01	0.08%	0.016696915	0.00%	9.11%	0.01%
Advanced Micro Devices Inc	AMD	1616.298	102.74	166,058.41				23.60%	
ResMed Inc	RMD	146.867	223.85	32,876.16	0.09%	0.009470628	0.00%	14.08%	0.01%
Mettler-Toledo International Inc	MTD	20.841	1180.91	24,611.29	0.07%			9.24%	0.01%
VICI Properties Inc	VICI	1056.703	32.62	34,469.64	0.10%	0.053034948	0.01%	2.59%	0.00%
Copart Inc	CPRT	966.093	56.59	54,671.20					
Jacobs Solutions Inc	J	122.544	120.89	14,814.30	0.04%	0.010588138	0.00%	12.45%	0.01%
Albemarle Corp	ALB	117.651	72.02	8,473.19		0.022493752		79.84%	
Fortinet Inc	FTNT	768.974	96.26	74,021.44	0.21%			9.01%	0.02%
Moderna Inc	MRNA	386.623	28.35	10,960.75					
Essex Property Trust Inc	ESS	64.326	306.57	19,720.29	0.06%	0.033532309	0.00%	3.33%	0.00%
CoStar Group Inc	CSGP	421.763	79.23	33,416.26					
Realty Income Corp	O	891.769	57.7415	51,492.09		0.055800421			
Westinghouse Air Brake Technologies Corp	WAB	170.848	181.35	30,983.31	0.09%	0.005514199	0.00%	15.34%	0.01%
Palantir Technologies Inc	PLTR	2248.951	84.4	189,811.45				31.39%	
Pool Corp	POOL	37.718	318.35	12,007.59	0.03%	0.015077745	0.00%	8.77%	0.00%
Western Digital Corp	WDC	347.824	40.43	14,062.52				189.78%	
PepsiCo Inc	PEP	1371.312	149.94	205,614.46	0.59%	0.036147792	0.02%	5.01%	0.03%
TE Connectivity PLC	TEL	298.353	141.32	42,163.27	0.12%	0.020096235	0.00%	7.32%	0.01%
Diamondback Energy Inc	FANG	289.441	159.88	46,275.81		0.025018764		-7.45%	
Palo Alto Networks Inc	PANW	662.100	170.64	112,980.74	0.33%			13.48%	0.04%
ServiceNow Inc	NOW	207.199	796.14	164,959.72					
Church & Dwight Co Inc	CHD	246.109	110.09	27,094.14		0.010718503			
Federal Realty Investment Trust	FRT	85.780	96.72	8,296.65	0.02%	0.045492142	0.00%	4.52%	0.00%
MGM Resorts International	MGM	282.951	29.64	8,386.66	0.02%			17.73%	0.00%
American Electric Power Co Inc	AEP	533.988	109.27	58,348.83	0.17%	0.034044111	0.01%	5.15%	0.01%
Invitation Homes Inc	INVH	612.690	34.85	21,352.23	0.06%	0.033285509	0.00%	3.76%	0.00%
PTC Inc	PTC	120.324	154.95	18,644.13	0.05%			16.78%	0.01%
JB Hunt Transport Services Inc	JBHT	100.008	147.95	14,796.21	0.04%	0.011895911	0.00%	16.22%	0.01%
Lam Research Corp	LRCX	1283.662	72.7	93,322.23	0.27%	0.012654746	0.00%	16.87%	0.05%
Mohawk Industries Inc	MHK	62.587	114.18	7,146.21	0.02%			8.38%	0.00%
GE HealthCare Technologies Inc	GEHC	457.298	80.71	36,908.55	0.11%	0.001734605	0.00%	9.53%	0.01%
Pentair PLC	PNR	164.970	87.48	14,431.55	0.04%	0.011431184	0.00%	9.27%	0.00%
Vertex Pharmaceuticals Inc	VRTX	256.790	484.82	124,496.86				305.00%	
Amcor PLC	AMCR	1445.343	9.7	14,019.83	0.04%	0.05257732	0.00%	7.10%	0.00%
Meta Platforms Inc	META	2189.898	576.36	1,262,169.70	3.63%	0.003643556	0.01%	13.81%	0.50%
T-Mobile US Inc	TMUS	1141.745	266.71	304,514.80		0.013197855			
United Rentals Inc	URI	65.332	626.7	40,943.62	0.12%	0.011424924	0.00%	9.68%	0.01%
Alexandria Real Estate Equities Inc	ARE	173.092	92.51	16,012.72	0.05%	0.057074911	0.00%	2.61%	0.00%
Honeywell International Inc	HON	648.768	211.75	137,376.57		0.021345927			
Delta Air Lines Inc	DAL	645.962	43.6	28,163.94	0.08%	0.013761468	0.00%	11.42%	0.01%
United Airlines Holdings Inc	UAL	328.803	69.05	22,703.85	0.07%			12.86%	0.01%
Seagate Technology Holdings PLC	STX	211.707	84.95	17,984.54		0.033902295			
News Corp	NWS	189.341	30.37	5,750.28		0.006585446			
Centene Corp	CNC	496.060	60.71	30,115.81	0.09%			7.97%	0.01%
Apollo Global Management Inc	APO	570.480	136.94	78,121.60	0.22%	0.013509566	0.00%	13.50%	0.03%
Martin Marietta Materials Inc	MLM	60.974	478.13	29,153.57		0.006609081		-11.04%	

Name	Ticker	[4] Shares Outst'g	[5] Price	[6] Market Capitalization	[7] Weight in Index	[8] Estimated Dividend Yield	[9] Cap-Weighted Dividend Yield	[10] Bloomberg Long-Term Growth Est.	[11] Cap-Weighted Long-Term Growth Est.
Teradyne Inc	TER	161.539	82.6	13,343.11	0.04%	0.005811138	0.00%	6.69%	0.00%
PayPal Holdings Inc	PYPL	989.242	65.25	64,548.07	0.19%			12.44%	0.02%
Tesla Inc	TSLA	3216.517	259.16	833,592.56					
Blackrock Inc	BLK	155.253	946.48	146,944.28		0.022018426			
KKR & Co Inc	KKR	888.251	115.61	102,690.64		0.00605484			
Arch Capital Group Ltd	ACGL	375.716	96.18	36,136.37	0.10%			2.86%	0.00%
Dow Inc	DOW	705.764	34.92	24,645.29		0.080183276		32.49%	
Everest Group Ltd	EG	42.934	363.33	15,599.25		0.022018551		28.71%	
Teledyne Technologies Inc	TDY	46.837	497.71	23,311.39	0.07%			9.78%	0.01%
Domino's Pizza Inc	DPZ	34.297	459.45	15,757.78	0.05%	0.015148547	0.00%	9.24%	0.00%
GE Vernova Inc	GEV	273.346	305.28	83,446.94		0.003275681		97.07%	
News Corp	NWSA	378.055	27.22	10,290.66		0.007347539			
Exelon Corp	EXC	1009.536	46.08	46,519.40	0.13%	0.034722222	0.00%	8.40%	0.01%
Global Payments Inc	GPN	245.876	97.92	24,076.21	0.07%	0.010212418	0.00%	9.66%	0.01%
Crown Castle Inc	CCI	435.434	104.23	45,385.26		0.060059484		33.10%	
Align Technology Inc	ALGN	73.210	158.86	11,630.19	0.03%			10.64%	0.00%
Kenvue Inc	KVUE	1911.241	23.98	45,831.55		0.034195163		34.17%	
Targa Resources Corp	TRGP	217.585	200.47	43,619.33		0.014964833			
Bunge Global SA	BG	133.968	76.42	10,237.84	0.03%	0.035592777	0.00%	3.46%	0.00%
LKQ Corp	LKQ	258.553	42.54	10,998.85		0.028208745			
Deckers Outdoor Corp	DECK	151.774	111.81	16,969.81				22.63%	
Workday Inc	WDAY	215.000	233.53	50,208.95					
Zoetis Inc	ZTS	447.792	164.65	73,728.94	0.21%	0.012146978	0.00%	7.96%	0.02%
Equinix Inc	EQIX	97.332	815.35	79,359.65		0.023008524			
Digital Realty Trust Inc	DLR	336.644	143.29	48,237.75		0.034056808			
Molina Healthcare Inc	MOH	54.700	329.39	18,017.59	0.05%			9.45%	0.00%
Las Vegas Sands Corp	LVS	715.935	38.63	27,656.56	0.08%	0.025886617	0.00%	7.35%	0.01%

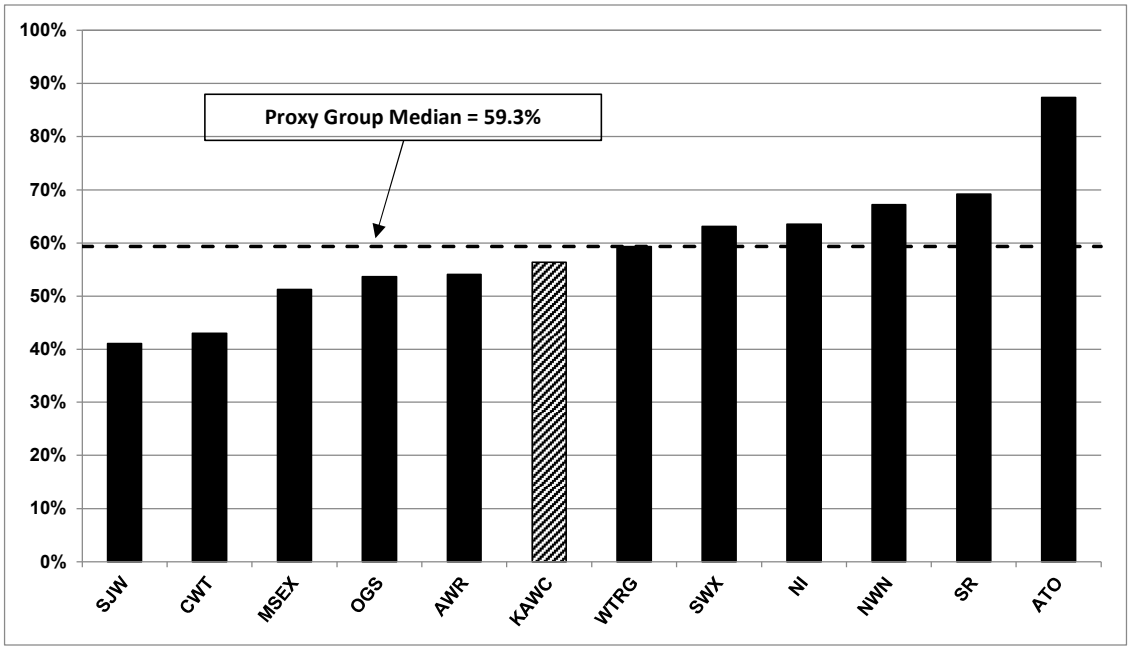
Notes:
[1] Equals sum of Col. [9]
[2] Equals sum of Col. [11]
[3] Equals ([1] x (1 + (0.5 x [2]))) + [2]
[4] Bloomberg Professional as of March 31, 2025
[5] Bloomberg Professional as of March 31, 2025
[6] Equals [4] x [5]
[7] Equals weight in S&P 500 based on market capitalization [6] if Growth Rate >0% and ≤20%
[8] Bloomberg Professional, as of March 31, 2025
[9] Equals [7] x [8]
[10] Value Line, as of March 31, 2025
[11] Equals [7] x [10]

PROJECTED CAPITAL EXPENDITURES AS A PERCENT OF NET PLANT
($ Millions)

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		2024	2025	2026	2027	2028	2029	2025-2029 Projected Cap. Ex. / 2024 Net Plant
Atmos Energy Corporation	ATO							
Capital Spending per Share			$22.70	$22.60	$22.10	$21.60	$21.60	
Common Shares Outstanding			163.00	168.00	$176.50	185.00	185.00	
Capital Expenditures			$3,700.1	$3,796.8	$3,900.7	$3,996.0	$3,996.0	87.3%
Net Plant		$22,204.0						
NiSource Inc.	NI							
Capital Spending per Share			$5.50	$6.00	$6.50	$7.00	$7.00	
Common Shares Outstanding			485.00	500.00	$512.50	525.00	525.00	
Capital Expenditures			$2,667.5	$3,000.0	$3,331.3	$3,675.0	$3,675.0	63.5%
Net Plant		$25,750.0						
Northwest Natural Gas Company	NWN							
Capital Spending per Share			$9.50	$10.00	$10.75	$11.50	$11.50	
Common Shares Outstanding			43.00	45.00	$47.50	50.00	50.00	
Capital Expenditures			$408.5	$450.0	$510.6	$575.0	$575.0	67.2%
Net Plant		$3,750.0						
ONE Gas, Inc.	OGS							
Capital Spending per Share			$12.30	$12.45	$12.60	$12.75	$12.75	
Common Shares Outstanding			56.50	56.50	$56.75	57.00	57.00	
Capital Expenditures			$695.0	$703.4	$715.1	$726.8	$726.8	53.6%
Net Plant		$6,650.0						
Southwest Gas Corporation	SWX							
Capital Spending per Share			$12.50	$13.50	$14.00	$14.50	$14.50	
Common Shares Outstanding			73.00	73.00	$74.00	75.00	75.00	
Capital Expenditures			$912.5	$985.5	$1,036.0	$1,087.5	$1,087.5	63.1%
Net Plant		$8,100.0						
Spire, Inc.	SR							
Capital Spending per Share			$13.15	$13.25	$13.00	$12.75	$12.75	
Common Shares Outstanding			60.00	62.00	$67.00	72.00	72.00	
Capital Expenditures			$789.0	$821.5	$871.0	$918.0	$918.0	69.2%
Net Plant		$6,243.3						
American States Water Company	AWR							
Capital Spending per Share			$5.90	$5.83	$5.75	$5.75	$5.75	
Common Shares Outstanding			39.00	39.00	$39.00	39.00	39.00	
Capital Expenditures			$230.1	$227.2	$224.3	$224.3	$224.3	54.1%
Net Plant		$2,090.0						
California Water Service Group	CWT							
Capital Spending per Share			$6.25	$6.35	$6.45	$6.45	$6.45	
Common Shares Outstanding			55.00	52.50	$50.00	50.00	50.00	
Capital Expenditures			$343.8	$333.4	$322.5	$322.5	$322.5	43.0%
Net Plant		$3,825.0						
Middlesex Water Company	MSEX							
Capital Spending per Share			$5.65	$5.83	$6.00	$6.00	$6.00	
Common Shares Outstanding			17.95	17.98	$18.00	18.00	18.00	
Capital Expenditures			$101.4	$104.7	$108.0	$108.0	$108.0	51.2%
Net Plant		$1,035.0						
SJW Group	SJW							
Capital Spending per Share			$8.50	$8.63	$8.75	$8.75	$8.75	
Common Shares Outstanding			31.00	30.50	$30.00	30.00	30.00	
Capital Expenditures			$263.5	$263.1	$262.5	$262.5	$262.5	41.1%
Net Plant		$3,200.0						
Essential Utilities, Inc.	WTRG							
Capital Spending per Share			$5.10	$5.05	$5.00	$5.00	$5.00	
Common Shares Outstanding			279.00	283.50	$288.00	288.00	288.00	
Capital Expenditures			$1,422.9	$1,431.7	$1,440.0	$1,440.0	$1,440.0	59.3%
Net Plant		$12,097.0						
Kentucky American Water	KAWC							
Capital Expenditures [8]			$84.95	$96.36	$90.98	$94.85	$100.71	56.3%
Net Plant [9]		$830.7						

Notes:
[1] - [6] Value Line, dated January 3, 2025 and February 21, 2025
[7] Equals (Column [2] + [3] + [4] + [5] + [6]) / Column [1]
[8] Company Provided Data
[9] Company provided data from KY 2024 Water Annual Report

PROJECTED CAPITAL EXPENDITURES AS A PERCENT OF NET PLANT



Projected CAPEX / Net Plant

Rank	Company		Percent
1	SJW Group	SJW	41.1%
2	California Water Service Group	CWT	43.0%
3	Middlesex Water Company	MSEX	51.2%
4	ONE Gas, Inc.	OGS	53.6%
5	American States Water Company	AWR	54.1%
6	Kentucky American Water	KAWC	56.3%
7	Essential Utilities, Inc.	WTRG	59.3%
8	Southwest Gas Corporation	SWX	63.1%
9	NiSource Inc.	NI	63.5%
10	Northwest Natural Gas Company	NWN	67.2%
11	Spire, Inc.	SR	69.2%
12	Atmos Energy Corporation	ATO	87.3%
	Proxy Group Median		59.3%
	Kentucky American Water as % of Median		0.95

Notes:
Exhibit AEB-7, pp. 1-2 col. [7]

COMPARISON OF KAWC AND PROXY GROUP COMPANIES
COST RECOVERY MECHANISMS

Company	Ticker	State	Utility Type	Infrastructure Cost Recovery Mechanism	Citation	Future Test Year	Revenue Stabilization or Decoupling	Citations
American States Water Co								Infrastructure Cost Recovery: 2024 10-K, p. 91-92, and p. 94
	AWR	California	Water	Yes		Fully Forecast	Full	Revenue Stabilization or Decoupling: 2024 10-K, p. 50 and p. 95
	AWR	California	Electric	Yes		Fully Forecast	Full	Test Year: S&P Cap IQ Pro, Commission Profiles; 10-K p. 61
Atmos Energy Corporation								
	ATO	Colorado	Gas	Yes		Historical	No	Infrastructure Cost Recovery: 2024 10-K, p. 7-10
	ATO	Kansas	Gas	Yes		Historical	No	Revenue Stabilization or Decoupling: 2024 10-K, p. 8-10, S&P Global Market Intelligence,
	ATO	Kentucky	Gas	Yes		Fully Forecast	Partial	Regulatory Focus: Adjustment Clauses, dated 7/18/22
	ATO	Louisiana	Gas	Yes		Historical	FRP	Infrastructure mechanism: 2024 10-K p. 8
	ATO	Mississippi	Gas	Yes		Historical	FRP	Test Year: S&P Cap IQ Pro, Rate Case History and Commission Profiles; Infrastructure
	ATO	Tennessee	Gas	Yes		Fully Forecast	FRP	mechanism: 2024 10-K p. 8
	ATO	Texas	Gas	Yes		Historical	FRP	
	ATO	Virginia	Gas	Yes		Historical	Partial	
California Water Service Group								
	CWT	California	Water	Yes		Fully Forecast	Full	Infrastructure Cost Recovery and Revenue Stabilization or Decoupling: 2024 10-K, p.9
	CWT	Hawaii	Water	No		Fully Forecast	No	(California Water); Company Tariffs (HI, WA, NM)
	CWT	New Mexico	Water	No		Partially Forecast	No	Test Year: S&P Cap IQ Pro, Commission Profiles
	CWT	Washington	Water	Yes		Historical	No	
Essential Utilities, Inc.								
	WTRG	Pennsylvania	Water	Yes		Fully Forecast	No	Infrastructure Cost Recovery: 2024 10-K, p. 9, 39; S&P Global Market Intelligence, Regulatory
	WTRG	Pennsylvania	Gas	Yes		Fully Forecast	Partial	Focus: Adjustment Clauses, dated 7/18/22.
	WTRG	Ohio	Water	Yes		Partially Forecast	No	Test Year: S&P Cap IQ Pro, Rate Case History and Commission Profiles; 2024 10-K p. 39;
	WTRG	Illinois	Water	Yes		Fully Forecast	Full	Aqua Virginia (WTRG) Case No. PUR-2023-00073
	WTRG	Texas	Water	Yes		Historical	No	Revenue Stabilization or Decoupling: 2024 10-K, pgs. 8, 9 & 39.
	WTRG	New Jersey	Water	Yes		Partially Forecast	No	
	WTRG	North Carolina	Water	Yes		Partially Forecast	No	
	WTRG	Indiana	Water	Yes		Fully Forecast	No	
	WTRG	Virginia	Water	Yes		Partially Forecast	No	
	WTRG	Kentucky	Gas	Yes		Fully Forecast	Partial	
	WTRG	West Virginia	Gas	No		Historical	No	
Middlesex Water Company								
	MSEX	New Jersey	Water	Yes		Partially Forecast	No	Infrastructure Cost Recovery/Revenue Decoupling: 2024 10-K p. 26; Tariffs (NJ, DE)
	MSEX	Delaware	Water	Yes		Historical	No	Test Year: S&P Cap IQ Pro, Rate Case History
	MSEX	Pennsylvania	Water	No		Fully Forecast	No	
NiSource Inc.								
	NI	Indiana	Electric	Yes		Fully Forecast	Partial	Infrastructure Cost Recovery and Revenue Stabilization or Decoupling: S&P Global Market
	NI	Indiana	Gas	Yes		Fully Forecast	No	Intelligence, Regulatory Focus: Adjustment Clauses, dated 7/18/22; 2024 10-K p. 11 & 50; S&P
	NI	Kentucky	Gas	Yes		Fully Forecast	Partial	Commissions Profiles
	NI	Maryland	Gas	Yes		Partially Forecast	Partial	Test Year: S&P Cap IQ Pro, Rate Case History; Case 21-637-GA-AIR (Ohio)
	NI	Ohio	Gas	Yes		Partially Forecast	SFV	
	NI	Pennsylvania	Gas	Yes		Fully Forecast	Partial	
	NI	Virginia	Gas	Yes		Historical	Partial	
Northwest Natural Gas Company								Infrastructure Cost Recovery and Revenue Stabilization or Decoupling: S&P Global Market
	NWN	Oregon	Gas	No		Fully Forecast	Partial	Intelligence, Regulatory Focus: Adjustment Clauses, dated 7/18/22
	NWN	Washington	Gas	No		Historical	No	Test Year: S&P Cap IQ Pro, Rate Case History
ONE Gas, Inc.								
	OGS	Kansas	Gas	Yes		Historical	Partial	Infrastructure Cost Recovery and Revenue Stabilization or Decoupling: S&P Global Market
	OGS	Oklahoma	Gas	No		Historical	FRP	Intelligence, Regulatory Focus: Adjustment Clauses, dated 7/18/22
	OGS	Texas	Gas	Yes		Historical	FRP	Test Year: S&P Cap IQ Pro, Rate Case History
SJW Group								
	SJW	California	Water	Yes		Fully Forecast	Full	Infrastructure Cost Recovery: 2024 10-K, p. 5-8 for CA, p. 7-8 for CT, p.8 for TX (SIC), p. 8-9
	SJW	Connecticut	Water	Yes		Fully Forecast	Full	for ME.
	SJW	Maine	Water	Yes		Historical	No	Revenue Stabilization or Decoupling: 2024 10-K, p. 62-64
	SJW	Texas	Water	No		Historical	No	Test Year: S&P Cap IQ Pro, Rate Case History and Commission Profiles
Southwest Gas Corporation								
	SWX	Arizona	Gas	No		Historical	Full	Infrastructure Cost Recovery and Revenue Stabilization or Decoupling: S&P Global Market
	SWX	California	Gas	No		Fully Forecast	Full	Intelligence, Regulatory Focus: Adjustment Clauses, dated 7/18/22
	SWX	Nevada	Gas	Yes		Historical	Full	Test Year: S&P Cap IQ Pro, Rate Case History and Commission Profiles
Spire, Inc.								
	SR	Alabama (AL)	Gas	No		Fully Forecast	FRP	Infrastructure Cost Recovery and Revenue Stabilization or Decoupling: S&P Global Market
	SR	Alabama (Gulf)	Gas	No		Fully Forecast	FRP	Intelligence, Regulatory Focus: Adjustment Clauses, dated 7/18/22; 10-K 2024 p. 112-114.
	SR	Mississippi	Gas	No		Historical	FRP	Test Year: S&P Cap IQ Pro, Rate Case History; 10-K 2024 p. 112-114.
	SR	Missouri	Gas	Yes		Partially Forecast	Partial	

Proxy Group Totals			Yes	38	Historical	20	Full	9
			No	13	Fully Forecast	22	Partial	12
					Partially Forecast	9	FRP	9
							SFV	1
							No	20
		Infrastructure Cost Recovery Mechanism		74.51%	FTY	60.78%	RSM	60.78%
Kentucky American Water		Kentucky	Water	Yes		Fully Forecast	No	Data Provided by Company.

FLOTATION COST ADJUSTMENT

Company	Ticker	Date [i]	[1] Shares Issued (000)	[2] Offering Price	[3] Under-writing Discount [ii]	[4] Offering Expense ($000)	[5] Net Proceeds Per Share	[6] Total Flotation Costs ($000)	[7] Gross Equity Issue Before Costs ($000)	[8] Net Proceeds ($000)	[9] Flotation Cost Percentage	
American Water Works Company	AWK	2/28/2023	12,650	135.50	2.033	700	133.41	26,411	1,714,075	1,687,664	1.54%	[iii]

[i] Offering Completion Date
[ii] Underwriting discount is calculated as the market price minus the offering price when not explicitly given in the prospectus.
[iii] American Water Works Company: AWK Prospectus 424B7 02.28.2023

The flotation cost adjustment is derived by dividing the dividend yield by 1 − F (where F = flotation costs expressed in percentage terms), or by 0.9846, and adding that result to the constant growth rate to determine the cost of equity. Using the formulas shown previously in my testimony, the Constant Growth DCF calculation is modified as follows to accommodate an adjustment for flotation costs:

$$k = \frac{D \times (1 + 0.5g)}{P \times (1 - F)} + g$$

Company	Ticker	[10] Annualized Dividend	[11] Stock Price	[12] Dividend Yield	[13] Expected Dividend Yield	[14] Expected Dividend Yield Adjusted for Flotation Costs	[15] Value Line Earnings Growth	[16] Yahoo! Finance Earnings Growth	[17] Zacks Earnings Growth	[18] Average Earnings Growth	[19] Cost of Equity: Mean Growth Rate	[20] Cost of Equity Adjusted for Flotation Costs	
Atmos Energy Corporation	ATO	$3.48	$149.66	2.33%	2.41%	2.44%	6.00%	7.52%	7.10%	6.87%	9.28%	9.32%	
NiSource Inc.	NI	$1.12	$39.62	2.83%	2.95%	3.00%	9.50%	8.22%	8.20%	8.64%	11.59%	11.64%	
Northwest Natural Gas Company	NWN	$1.96	$41.60	4.71%	4.86%	4.94%	6.50%	6.50%	n/a	6.50%	11.36%	11.44%	
ONE Gas, Inc.	OGS	$2.68	$73.90	3.63%	3.70%	3.76%	4.00%	3.83%	4.70%	4.18%	7.88%	7.94%	
Southwest Gas Corporation	SWX	$2.48	$74.65	3.32%	3.48%	3.54%	10.00%	12.60%	6.60%	9.73%	13.22%	13.27%	
Spire, Inc.	SR	$3.14	$75.89	4.14%	4.27%	4.34%	4.50%	8.08%	6.50%	6.36%	10.63%	10.70%	
American States Water Company	AWR	$1.86	$76.98	2.42%	2.47%	2.51%	6.50%	1.75%	n/a	4.12%	6.59%	6.63%	
California Water Service Group	CWT	$1.20	$46.56	2.58%	2.93%	2.98%	13.00%	42.44%	n/a	27.72%	30.66%	30.70%	
Middlesex Water Company	MSEX	$1.36	$58.28	2.33%	2.46%	2.49%	7.00%	13.96%	n/a	10.48%	12.94%	12.97%	
SJW Group	SJW	$1.68	$53.31	3.15%	3.24%	3.29%	7.00%	4.52%	n/a	5.76%	9.00%	9.05%	
Essential Utilities, Inc.	WTRG	$1.30	$38.40	3.39%	3.50%	3.56%	7.00%	6.51%	6.60%	6.70%	10.21%	10.26%	
Median											10.63%	10.70%	
Flotation Cost Adjustment												0.07%	[21]

Notes:
[1] - [4] See Notes [i] to [iii] above
[5] Equals [8]/[1]
[6] Equals [4] + ([1] x [3])
[7] Equals [1] x [2]
[8] Equals [7] - [6]
[9] Equals [6] / [7]
[10] Bloomberg Professional
[11] Bloomberg Professional, equals 30-day average as of March 31, 2025
[12] Equals [10] / [11]
[13] Equals [12] x (1 + 0.5 x [18])
[14] Equals [13] / (1 − Flotation Cost)
[15] Value Line
[16] Yahoo! Finance
[17] Zacks Investment Research
[18] Equals Average of [15], [16], [17]
[19] Equals [13] + [18]
[20] Equals [14] + [18]
[21] Equals [20] (Median) - [19] (Median)

[22] S&P Capital IQ and Zacks reported an equivalent projected EPS growth rate for AWR, CWT, MSEX and SJW. To avoid doubling counting, I excluded the projected EPS growth rate from Zacks for AWR, CWT, MSEX and SJW.

CAPITAL STRUCTURE ANALYSIS

COMMON EQUITY RATIO [1]

Proxy Group Company	Ticker	2023	2022	2021	3-yr Avg.
American States Water Company	AWR	50.32%	54.16%	56.91%	53.80%
Atmos Energy Corporation	ATO	60.20%	60.01%	59.88%	60.03%
California Water Service Group	CWT	50.28%	50.00%	48.82%	49.70%
Essential Utilities, Inc.	WTRG	55.79%	56.75%	53.58%	55.38%
Middlesex Water Company	MSEX	56.62%	57.46%	57.39%	57.16%
NiSource Inc.	NI	55.44%	54.17%	54.85%	54.82%
Northwest Natural Gas Company	NWN	46.96%	47.72%	44.08%	46.25%
ONE Gas, Inc.	OGS	60.41%	58.24%	61.09%	59.92%
SJW Group	SJW	51.33%	50.45%	50.85%	50.88%
Southwest Gas Corporation	SWX	47.45%	42.33%	45.87%	45.22%
Spire, Inc.	SR	46.19%	47.22%	48.62%	47.34%
Proxy Group					
MEAN		52.82%	52.59%	52.91%	52.77%
LOW		46.19%	42.33%	44.08%	45.22%
HIGH		60.41%	60.01%	61.09%	60.03%

COMMON EQUITY RATIO - UTILITY OPERATING COMPANIES

Company Name	Ticker	2023	2022	2021	3-yr Avg.
Golden State Water / Bear Valley	AWR	50.32%	54.16%	56.91%	53.80%
Atmos Energy Corporation	ATO	60.20%	60.01%	59.88%	60.03%
California Water Service	CWT	49.94%	49.51%	48.07%	49.17%
New Mexico Water Service Water Division	CWT	59.90%	63.85%	65.25%	63.00%
New Mexico Water Service Sewer Division	CWT	62.32%	63.61%	61.90%	62.61%
Washington Water Service	CWT	56.97%	60.27%	65.96%	61.07%
Hawaii Water Service Kaanapali Division	CWT	49.38%	49.85%	51.93%	50.39%
Hawaii Water Service Pukalani Division	CWT	67.08%	65.87%	65.58%	66.18%
Aqua Pennsylvania Water	WTRG	51.23%	55.77%	53.84%	53.62%
Aqua Pennsylvania Wastewater	WTRG	99.92%	99.90%	98.06%	99.29%
Peoples Natural Gas Company	WTRG	55.92%	53.41%	53.44%	54.25%
Peoples Gas Company	WTRG	54.83%	56.67%	54.83%	55.44%
Aqua Ohio Water	WTRG	53.47%	54.03%	52.11%	53.20%
Aqua Ohio Wastewater	WTRG	90.58%	74.40%	73.67%	79.55%
Aqua Illinois	WTRG	58.81%	56.55%	57.99%	57.78%
Aqua Texas	WTRG	52.80%	49.99%	49.81%	50.87%
Aqua New Jersey, Inc. Water	WTRG	49.09%	55.74%	53.19%	52.67%
Aqua New Jersey, Inc. Wastewater	WTRG	100.00%	100.00%	79.06%	93.02%
Aqua North Carolina	WTRG		50.21%	48.75%	49.48%
Aqua Virginia	WTRG	50.31%	47.83%	48.83%	48.99%
Delta Natural Gas Company	WTRG	58.03%	52.45%	49.69%	53.39%
Peoples Gas of WV	WTRG		31.35%	39.38%	35.36%
Middlesex Water Company	MSEX	56.91%	57.50%	57.46%	57.29%
Pinelands Water	MSEX	36.86%	52.71%	51.34%	46.97%
Pinelands WW	MSEX	39.89%	55.29%	51.48%	48.89%
Northern Indiana Public Service Company LLC	NI	59.26%	56.92%	58.59%	58.26%
Columbia Gas of Kentucky, Inc.	NI	53.66%	54.91%	53.87%	54.15%
Columbia Gas of Maryland, Inc.	NI	52.00%	51.96%	55.26%	53.07%
Columbia Gas of Ohio, Inc.	NI	50.50%	50.67%	50.79%	50.65%
Columbia Gas of Pennsylvania, Inc.	NI	55.88%	56.64%	56.05%	56.19%
Columbia Gas of Virginia, Inc.	NI	45.25%	44.25%	44.52%	44.67%
Northwest Natural Gas Company	NWN	46.96%	47.72%	44.08%	46.25%
Kansas Gas Service Company, Inc.	OGS	60.44%	58.37%	61.37%	60.06%
Oklahoma Natural Gas Company	OGS	60.46%	58.26%	60.99%	59.90%
Texas Gas Service Company, Inc.	OGS	60.35%	58.13%	60.98%	59.82%
San Jose Water	SJW	49.64%	48.74%	50.22%	49.53%
CT Water	SJW	53.99%	52.92%	50.95%	52.62%
Maine Water Co.	SJW	52.77%	48.91%	48.30%	49.99%
Canyon Lake Water Service Company	SJW	48.92%	53.74%	59.53%	54.06%
Southwest Gas Corporation	SWX	47.45%	42.33%	45.87%	45.22%
Spire Alabama Inc.	SR	51.50%	52.01%	54.91%	52.81%
Spire Gulf Inc.	SR	44.44%	41.35%	41.14%	42.31%
Spire Mississippi Inc.	SR	36.88%	38.02%	39.18%	38.03%
Spire Missouri Inc.	SR	44.11%	45.49%	46.20%	45.27%

Notes:
[1] Ratios are weighted by actual common capital, preferred equity, long-term debt and short-term debt of Operating Subsidiaries.
[2] Natural Gas, Electric and Water operating subsidiaries where data was unable to be obtained for 2023, 2022 and 2021 were removed from the analysis.

CAPITAL STRUCTURE ANALYSIS

LONG-TERM DEBT RATIO [1]

Proxy Group Company	Ticker	2023	2022	2021	3-yr Avg.
American States Water Company	AWR	38.91%	34.94%	38.45%	37.43%
Atmos Energy Corporation	ATO	39.80%	39.99%	40.12%	39.97%
California Water Service Group	CWT	44.46%	48.28%	51.10%	47.95%
Essential Utilities, Inc.	WTRG	43.50%	39.63%	43.69%	42.27%
Middlesex Water Company	MSEX	37.85%	35.79%	39.54%	37.73%
NiSource Inc.	NI	44.56%	45.83%	45.15%	45.18%
Northwest Natural Gas Company	NWN	52.40%	45.46%	44.85%	47.57%
ONE Gas, Inc.	OGS	25.06%	41.76%	38.91%	35.24%
SJW Group	SJW	42.65%	43.32%	46.96%	44.31%
Southwest Gas Corporation	SWX	52.55%	53.97%	49.59%	52.04%
Spire, Inc.	SR	42.51%	39.45%	40.00%	40.65%
Proxy Group					
MEAN		42.20%	42.58%	43.49%	42.76%
LOW		25.06%	34.94%	38.45%	35.24%
HIGH		52.55%	53.97%	51.10%	52.04%

LONG-TERM DEBT RATIO - UTILITY OPERATING COMPANIES

Company Name	Ticker	2023	2022	2021	3-yr Avg.
Golden State Water / Bear Valley	AWR	38.91%	34.94%	38.45%	37.43%
Atmos Energy Corporation	ATO	39.80%	39.99%	40.12%	39.97%
California Water Service	CWT	44.58%	48.85%	51.85%	48.43%
New Mexico Water Service Water Division	CWT	37.97%	33.63%	32.45%	34.68%
New Mexico Water Service Sewer Division	CWT	36.26%	34.70%	36.53%	35.83%
Washington Water Service	CWT	42.43%	35.60%	34.04%	37.36%
Hawaii Water Service Kaanapali Division	CWT	50.62%	50.15%	48.07%	49.61%
Hawaii Water Service Pukalani Division	CWT	32.92%	34.13%	34.42%	33.82%
Aqua Pennsylvania Water	WTRG	48.05%	43.55%	45.28%	45.63%
Aqua Pennsylvania Wastewater	WTRG	0.08%	0.10%	1.94%	0.71%
Peoples Natural Gas Company	WTRG	43.18%	37.35%	39.09%	39.88%
Peoples Gas Company	WTRG	43.12%	27.32%	43.12%	37.85%
Aqua Ohio Water	WTRG	46.53%	45.97%	47.89%	46.80%
Aqua Ohio Wastewater	WTRG	9.42%	25.60%	26.33%	20.45%
Aqua Illinois	WTRG	41.19%	43.45%	42.01%	42.22%
Aqua Texas	WTRG	47.20%	50.01%	50.19%	49.13%
Aqua New Jersey, Inc. Water	WTRG	50.91%	44.26%	46.81%	47.33%
Aqua New Jersey, Inc. Wastewater	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua North Carolina	WTRG		49.79%	51.25%	50.52%
Aqua Virginia	WTRG	49.69%	52.17%	51.17%	51.01%
Delta Natural Gas Company	WTRG	36.96%	37.19%	41.51%	38.55%
Peoples Gas of WV	WTRG		21.98%	43.11%	32.55%
Middlesex Water Company	MSEX	37.46%	36.24%	40.01%	37.90%
Pinelands Water	MSEX	63.14%	0.00%	0.00%	21.05%
Pinelands WW	MSEX	60.11%	0.00%	0.00%	20.04%
Northern Indiana Public Service Company LLC	NI	40.74%	43.08%	41.41%	41.74%
Columbia Gas of Kentucky, Inc.	NI	46.34%	45.09%	46.13%	45.85%
Columbia Gas of Maryland, Inc.	NI	48.00%	48.04%	44.74%	46.93%
Columbia Gas of Ohio, Inc.	NI	49.50%	49.33%	49.21%	49.35%
Columbia Gas of Pennsylvania, Inc.	NI	44.12%	43.36%	43.95%	43.81%
Columbia Gas of Virginia, Inc.	NI	54.75%	55.75%	55.48%	55.33%
Northwest Natural Gas Company	NWN	52.40%	45.46%	44.85%	47.57%
Kansas Gas Service Company, Inc.	OGS	39.56%	41.63%	38.63%	39.94%
Oklahoma Natural Gas Company	OGS	39.54%	41.74%	39.01%	40.10%
Texas Gas Service Company, Inc.	OGS	0.00%	41.87%	39.02%	26.96%
San Jose Water	SJW	45.52%	42.87%	49.72%	46.04%
CT Water	SJW	40.35%	43.98%	45.81%	43.38%
Maine Water Co.	SJW	35.59%	41.40%	37.26%	38.08%
Canyon Lake Water Service Company	SJW	40.75%	46.10%	40.28%	42.38%
Southwest Gas Corporation	SWX	52.55%	53.97%	49.59%	52.04%
Spire Alabama Inc.	SR	41.62%	33.01%	42.04%	38.89%
Spire Gulf Inc.	SR	51.30%	38.77%	42.00%	44.02%
Spire Mississippi Inc.	SR	0.00%	0.00%	0.00%	0.00%
Spire Missouri Inc.	SR	42.96%	42.91%	39.42%	41.76%

Notes:
[1] Ratios are weighted by actual common capital, preferred equity, long-term debt and short-term debt of Operating Subsidiaries.
[2] Natural Gas, Electric and Water operating subsidiaries where data was unable to be obtained for 2023, 2022 and 2021 were removed from the analysis.

CAPITAL STRUCTURE ANALYSIS

PREFERRED EQUITY RATIO [1]

Proxy Group Company	Ticker	2023	2022	2021	3-yr Avg.
American States Water Company	AWR	0.00%	0.00%	0.00%	0.00%
Atmos Energy Corporation	ATO	0.00%	0.00%	0.00%	0.00%
California Water Service Group	CWT	0.00%	0.00%	0.00%	0.00%
Essential Utilities, Inc.	WTRG	0.00%	0.00%	0.00%	0.00%
Middlesex Water Company	MSEX	0.28%	0.30%	0.32%	0.30%
NiSource Inc.	NI	0.00%	0.00%	0.00%	0.00%
Northwest Natural Gas Company	NWN	0.00%	0.00%	0.00%	0.00%
ONE Gas, Inc.	OGS	0.00%	0.00%	0.00%	0.00%
SJW Group	SJW	0.00%	0.00%	0.00%	0.00%
Southwest Gas Corporation	SWX	0.00%	0.00%	0.00%	0.00%
Spire, Inc.	SR	0.00%	0.00%	0.00%	0.00%
Proxy Group					
MEAN		0.03%	0.03%	0.03%	0.03%
LOW		0.00%	0.00%	0.00%	0.00%
HIGH		0.28%	0.30%	0.32%	0.30%

PREFERRED EQUITY RATIO - UTILITY OPERATING COMPANIES

Company Name	Ticker	2023	2022	2021	3-yr Avg.
Golden State Water / Bear Valley	AWR	0.00%	0.00%	0.00%	0.00%
Atmos Energy Corporation	ATO	0.00%	0.00%	0.00%	0.00%
California Water Service	CWT	0.00%	0.00%	0.00%	0.00%
New Mexico Water Service Water Division	CWT	0.00%	0.00%	0.00%	0.00%
New Mexico Water Service Sewer Division	CWT	0.00%	0.00%	0.00%	0.00%
Washington Water Service	CWT	0.00%	0.00%	0.00%	0.00%
Hawaii Water Service Kaanapali Division	CWT	0.00%	0.00%	0.00%	0.00%
Hawaii Water Service Pukalani Division	CWT	0.00%	0.00%	0.00%	0.00%
Aqua Pennsylvania Water	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua Pennsylvania Wastewater	WTRG	0.00%	0.00%	0.00%	0.00%
Peoples Natural Gas Company	WTRG	0.00%	0.00%	0.00%	0.00%
Peoples Gas Company	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua Ohio Water	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua Ohio Wastewater	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua Illinois	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua Texas	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua New Jersey, Inc. Water	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua New Jersey, Inc. Wastewater	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua North Carolina	WTRG		0.00%	0.00%	0.00%
Aqua Virginia	WTRG	0.00%	0.00%	0.00%	0.00%
Delta Natural Gas Company	WTRG	0.00%	0.00%	0.00%	0.00%
Peoples Gas of WV	WTRG		0.00%	0.00%	0.00%
Middlesex Water Company	MSEX	0.28%	0.30%	0.33%	0.30%
Pinelands Water	MSEX	0.00%	0.00%	0.00%	0.00%
Pinelands WW	MSEX	0.00%	0.00%	0.00%	0.00%
Northern Indiana Public Service Company LLC	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Kentucky, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Maryland, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Ohio, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Pennsylvania, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Virginia, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Northwest Natural Gas Company	NWN	0.00%	0.00%	0.00%	0.00%
Kansas Gas Service Company, Inc.	OGS	0.00%	0.00%	0.00%	0.00%
Oklahoma Natural Gas Company	OGS	0.00%	0.00%	0.00%	0.00%
Texas Gas Service Company, Inc.	OGS	0.00%	0.00%	0.00%	0.00%
San Jose Water	SJW	0.00%	0.00%	0.00%	0.00%
CT Water	SJW	0.00%	0.00%	0.00%	0.00%
Maine Water Co.	SJW	0.00%	0.00%	0.00%	0.00%
Canyon Lake Water Service Company	SJW	0.00%	0.00%	0.00%	0.00%
Southwest Gas Corporation	SWX	0.00%	0.00%	0.00%	0.00%
Spire Alabama Inc.	SR	0.00%	0.00%	0.00%	0.00%
Spire Gulf Inc.	SR	0.00%	0.00%	0.00%	0.00%
Spire Mississippi Inc.	SR	0.00%	0.00%	0.00%	0.00%
Spire Missouri Inc.	SR	0.00%	0.00%	0.00%	0.00%

Notes:
[1] Ratios are weighted by actual common capital, preferred equity, long-term debt and short-term debt of Operating Subsidiaries.
[2] Natural Gas, Electric and Water operating subsidiaries where data was unable to be obtained for 2023, 2022 and 2021 were removed from the analysis.

CAPITAL STRUCTURE ANALYSIS

SHORT-TERM DEBT RATIO [1]

Proxy Group Company	Ticker	2023	2022	2021	3-yr Avg.
American States Water Company	AWR	10.77%	10.90%	4.64%	8.77%
Atmos Energy Corporation	ATO	0.00%	0.00%	0.00%	0.00%
California Water Service Group	CWT	5.27%	1.72%	0.08%	2.35%
Essential Utilities, Inc.	WTRG	0.70%	3.61%	2.73%	2.35%
Middlesex Water Company	MSEX	5.26%	6.45%	2.75%	4.82%
NiSource Inc.	NI	0.00%	0.00%	0.00%	0.00%
Northwest Natural Gas Company	NWN	0.64%	6.82%	11.07%	6.18%
ONE Gas, Inc.	OGS	14.53%	0.00%	0.00%	4.84%
SJW Group	SJW	6.02%	6.22%	2.19%	4.81%
Southwest Gas Corporation	SWX	0.00%	3.71%	4.54%	2.75%
Spire, Inc.	SR	11.30%	13.32%	11.38%	12.00%
Proxy Group					
MEAN		4.95%	4.80%	3.58%	4.44%
LOW		0.00%	0.00%	0.00%	0.00%
HIGH		14.53%	13.32%	11.38%	12.00%

SHORT-TERM DEBT RATIO - UTILITY OPERATING COMPANIES

Company Name	Ticker	2023	2022	2021	3-yr Avg.
Golden State Water / Bear Valley	AWR	10.77%	10.90%	4.64%	8.77%
Atmos Energy Corporation	ATO	0.00%	0.00%	0.00%	0.00%
California Water Service	CWT	5.48%	1.64%	0.07%	2.40%
New Mexico Water Service Water Division	CWT	2.13%	2.52%	2.30%	2.32%
New Mexico Water Service Sewer Division	CWT	1.43%	1.69%	1.57%	1.56%
Washington Water Service	CWT	0.60%	4.13%	0.00%	1.58%
Hawaii Water Service Kaanapali Division	CWT	0.00%	0.00%	0.00%	0.00%
Hawaii Water Service Pukalani Division	CWT	0.00%	0.00%	0.00%	0.00%
Aqua Pennsylvania Water	WTRG	0.72%	0.68%	0.87%	0.76%
Aqua Pennsylvania Wastewater	WTRG	0.00%	0.00%	0.00%	0.00%
Peoples Natural Gas Company	WTRG	0.90%	9.24%	7.47%	5.87%
Peoples Gas Company	WTRG	2.05%	16.01%	2.05%	6.71%
Aqua Ohio Water	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua Ohio Wastewater	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua Illinois	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua Texas	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua New Jersey, Inc. Water	WTRG	0.00%	0.00%	0.00%	0.00%
Aqua New Jersey, Inc. Wastewater	WTRG	0.00%	0.00%	20.94%	6.98%
Aqua North Carolina	WTRG		0.00%	0.00%	0.00%
Aqua Virginia	WTRG	0.00%	0.00%	0.00%	0.00%
Delta Natural Gas Company	WTRG	5.01%	10.36%	8.80%	8.06%
Peoples Gas of WV	WTRG		46.66%	17.51%	32.09%
Middlesex Water Company	MSEX	5.35%	5.96%	2.20%	4.50%
Pinelands Water	MSEX	0.00%	47.29%	48.66%	31.98%
Pinelands WW	MSEX	0.00%	44.71%	48.52%	31.08%
Northern Indiana Public Service Company LLC	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Kentucky, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Maryland, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Ohio, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Pennsylvania, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Virginia, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Northwest Natural Gas Company	NWN	0.64%	6.82%	11.07%	6.18%
Kansas Gas Service Company, Inc.	OGS	0.00%	0.00%	0.00%	0.00%
Oklahoma Natural Gas Company	OGS	0.00%	0.00%	0.00%	0.00%
Texas Gas Service Company, Inc.	OGS	39.65%	0.00%	0.00%	13.22%
San Jose Water	SJW	4.84%	8.40%	0.05%	4.43%
CT Water	SJW	5.67%	3.10%	3.24%	4.00%
Maine Water Co.	SJW	11.64%	9.70%	14.44%	11.93%
Canyon Lake Water Service Company	SJW	10.34%	0.16%	0.19%	3.56%
Southwest Gas Corporation	SWX	0.00%	3.71%	4.54%	2.75%
Spire Alabama Inc.	SR	6.88%	14.98%	3.05%	8.30%
Spire Gulf Inc.	SR	4.25%	19.88%	16.86%	13.67%
Spire Mississippi Inc.	SR	63.12%	61.98%	60.82%	61.97%
Spire Missouri Inc.	SR	12.93%	11.60%	14.38%	12.97%

Notes:
[1] Ratios are weighted by actual common capital, preferred equity, long-term debt and short-term debt of Operating Subsidiaries.
[2] Natural Gas, Electric and Water operating subsidiaries where data was unable to be obtained for 2023, 2022 and 2021 were removed from the analysis.

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-	**)**	
AMERICAN WATER COMPANY FOR AN	**)**	**CASE NO. 2025-00122**
ADJUSTMENT OF RATES	**)**	

DIRECT TESTIMONY OF ROBERT BURTON

May 16, 2025

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Robert Burton and my business address is 2300 Richmond Rd, Lexington, KY 40502.

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

A. I am employed by Kentucky-American Water Company ("Kentucky-American," "KAWC" or "Company") as President.

Q. Please describe your business experience.

A. From 1992 to 2010, I held various roles of increasing responsibility for water and wastewater utilities. I joined American Water Works Company, Inc. ("American Water") Military Services Group in 2010, and I previously served for four years as General Manager of that company's Fort Belvoir, VA and Fort Meade, MD water and wastewater systems. In 2014, I was promoted to Director of Military Operations for American Water's Military Services Group. In that role I oversaw the operations of the group's water and wastewater operations at 11 military bases. From 2015 through 2019, I served as Sr. Director of Operations for Pennsylvania-American Water Company. In that role I was responsible for providing reliable water and wastewater service to more than 865,000 people in the company's central, northeast, and southeast divisions, overseeing more than 50 water systems, 10 wastewater systems and over 500 employees working in over 200 municipalities. In 2019, I was promoted to President of West Virginia-American Water. In that role I was responsible for all aspects of the Company's business, including financial, operations (including production, distribution, customer service, engineering and capital investment planning), employee relations, environmental, and regulatory

affairs. In January 2025, I was named President of Kentucky-American Water Company ("Kentucky-American, "KAWC" or "the Company". I also am a member of the American Water Works Association, and the Water Environment Association.

Q. Please describe your duties as President of KAWC.

A. As President of KAWC, I am again responsible for all aspects of the Company's business - financial, operations, employee relations, environmental, and regulatory affairs. In this role, I am ultimately responsible for assuring that the Company delivers high-quality water and wastewater services to our customers. This responsibility includes taking care to see that all activities of the Company are carried out in compliance with local, state and federal laws and regulations, and standards of good business practice.

Q. Have you previously testified before the Kentucky Public Service Commission?

A. No, I have not. However, I have testified before the West Virginia Public Service Commission in Case Numbers 23-382-W-42T, 22-0796-W-PC, 21-0369-W-42T, and 20-0465-W-DSIC. I have also testified before the Pennsylvania Public Utility Commission.

Q. Please describe the purpose of your testimony.

A. There are several reasons why I am offering testimony in this case. First, I introduce the witnesses who are providing testimony in this proceeding on behalf of the Company. I also discuss the major drivers of the Company's requested rate relief, including the primary driver which is the significant capital investments that the Company has made and plans to make to the KAWC water system through December 31, 2026. I also discuss the value of service the Company provides while maintaining the affordability of rates for its customers. I then discuss the Company's ongoing efforts to improve water

efficiency. Finally, I highlight the Company's community outreach efforts and corporate citizenship, which are emblematic of who we are as a company.

Q. Please describe the areas KAWC serves.

A. KAWC supplies water and/or wastewater services, and public and private fire service, to customers in Lexington and portions of Bourbon, Clark, Fayette, Franklin, Gallatin, Grant, Harrison, Jackson, Jessamine, Nicholas, Owen, Rockcastle, Scott and Woodford Counties. A map of KAWC's service territory is provided in the Direct Testimony of Company witness William Lewis.

II. INTRODUCTION OF WITNESSES

Q. Please list KAWC's witnesses in this case and provide a brief summary of their testimony.

A. In addition to my direct testimony, the following witnesses provide testimony in support of the Company's request:

William A. Lewis:	Provides testimony on KAWC's facilities and operations, commitment to water quality and safety, improving water efficiency, and O&M expenses, including staffing needs, employee compensation, and support services.
John Magner:	Provides testimony on the Company's capital investment planning process, plant additions, and some of the risks and challenges for water utilities associated with increased regulation and climate variability.
Dominic DeGrazia:	Provides testimony on the Company's development of the forecasted test year, the revenue requirement and the impact to the average residential customer's bill, the minimum standard filing requirements, rate base, rate case expense, depreciation and amortization, and

		the Qualified Infrastructure Program.
	Deba Ather:	Provides testimony on the continued affordability of the Company's rates.
	Robert Prendergast:	Provides testimony on certain O&M expenses, including labor and labor related, production costs, and service company, among others.
	Michi Chao:	Provides testimony on certain O&M expenses, including building maintenance and services, maintenance supplies and services, miscellaneous, office supplies, among others.
	Linda Schlessman	Provides testimony relating to the Company's income taxes.
	Michael Adams:	Provides testimony on the reasonableness of Service Company costs.
	Max McClellan:	Provides testimony on the Company's revenues, declining use, rate design and class cost of service study.
	Jennifer Gonzales:	Provides testimony on the Company's capital structure.
	Ann E. Bulkley:	Provides testimony on her recommendation regarding rate of return on rate base and assessment of the reasonableness of KAWC's proposed capital structure.
	Robert V. Mustich:	Provides testimony on the reasonableness of the Company's compensation program and benchmarks the Company's compensation expense against national and regional peer groups, including performance compensation and benefits.
	Harold Walker:	Provides testimony on the lead lag study and the appropriate cash working capital allowances for inclusion in the Company's rate base.

III. REASONS FOR REQUESTED RATE RELIEF

Q. What amount of rate relief is the Company seeking in this case?

A. Kentucky-American is seeking a rate increase to produce additional annual revenues of approximately $26.9 million per year, as well as the roll-in of approximately $9.9 million of Qualified Infrastructure Program ("QIP") revenues, which is a 19.9% increase over current water service revenues.

Q. Please explain why KAWC is requesting rate relief at this time?

A. KAWC's customers rely on the Company to provide them with safe and reliable water service. We take very seriously our obligation to meet our customers' needs and expectations, but water service is not without increasing cost. It requires us to incur a substantial amount of O&M expense, as well as make ongoing, significant capital investments. This filing, however, is primarily driven by the investments we are making to maintain and improve our infrastructure, which accounts for approximately 67.5% of our total requested rate increase. With the Company's longstanding history of operation, in many cases our infrastructure is between 50 and 100 years old. As explained by Mr. Magner, maintaining the Company's facilities requires substantial and constant capital investment. The Company's aging infrastructure, like every other water utility in the state, must be continuously replaced so that KAWC can continue to provide its customers safe, adequate, and reliable utility service.

Q. Why is KAWC filing a base rate case when it has available to it QIP, which allows recovery of capital investments for infrastructure replacement?

A. In order to meet the needs of the Company's infrastructure and ever increasing regulatory requirements, KAWC makes significant capital investments beyond the current reduced scope of assets eligible under its QIP. Between February 1, 2025 through December 31, 2026, KAWC has made or will make approximately $211.9 in gross plant additions. Of

this $211.9 million, only $58.6 million would be eligible for QIP recovery under the current reduced scope of the QIP. Thus, it is necessary for KAWC to file a base rate case to fully recover the capital investments it has made.

Q. Please explain why KAWC's planned plant additions exceeds what is recoverable through the QIP.

A. While QIP allows the Company to recover the replacement of some of its aging pipeline infrastructure, the current reduced scope of the QIP is very limited and does not permit KAWC to replace other aging infrastructure at the pace necessary to continue providing safe and reliable water service to our customers in the most affordable manner over the long term. As discussed by Company witness Magner, planned main replacements typically cost approximately $330 per linear foot, whereas unplanned emergency replacements cost over $1,000 per linear foot. Main breaks are not only costly to repair, they are also disruptive to our customers and the communities that we serve. The disruption of water service, even when temporary, can result in customers being inconvenienced and dissatisfied with the service they receive from the Company. And even though KAWC takes actions to proactively find leaks and replace these mains as planned versus emergency work, which is described more fully in Company witness Lewis's Direct Testimony, the Company has also determined that it is reasonable and prudent to increase the amount it will invest in the replacement of its aged infrastructure in 2026 above the annual spend that is currently recoverable under the QIP.

Q. Are there other factors contributing to the requested rate relief in this case?

A. Yes, there are, but none approaches the magnitude of our capital investment program as a driver to submit this case. In the area of O&M expense, the Company has been quite

successful in controlling our costs. As explained by Company witness DeGrazia, both overall and on a per customer basis, the Company has been able to keep its O&M expense increase, net of production costs, below the rate of inflation. While the Company has effectively controlled its O&M expenses, the Company must recover its prudently incurred and reasonable O&M costs which reflect, among other things, the need to hire additional full-time employees and the full recognition in rates of the total market-based compensation the Company pays its employees to attract and keep a highly-skilled and qualified workforce. As Company witnesses Lewis and Mustich demonstrate in their respective testimonies, the Company's total market-based employee compensation is a reasonable, prudently incurred expense designed to keep the organization focused on delivering safe, reliable, and affordable water service while improving performance at all levels of the organization. These levels of compensation are appropriately attributed to meeting both personal and companywide goals in order to ensure maximum value for our customers and accomplish the need to attract and retain water utility professionals. These levels of compensation are reasonably designed to attract and retain water quality professionals, with the Company employees bearing appropriate risk of providing maximum value, quality service, for our customers.

In addition to the O&M expenses discussed above, the Company's proposed cost of capital is required, as Company witness Ann Bulkley explains, due to sustained elevated levels of inflation, uncertainty in federal monetary policy and increased interest rates that are expected to remain elevated over the next few years. The Company must maintain its ability to attract capital to continue its investment in infrastructure. Consistent with our obligation to provide safe and adequate service, we maintain adequate sources of supply,

treatment, pumping, transmission, distribution and collection facilities while complying with applicable laws and regulations. But the funding level needed to simply maintain the safety and integrity of the systems is not the same as the funding levels that best serve the long-term interests of our customers. From the perspective of long-term sustainable customer service and pricing, the Company's goal is to continue providing high quality water service in the most cost-effective way through the replacement, operation, maintenance, and rehabilitation of assets for present and future customers. As Company witnesses Lewis and Magner demonstrate, the Company's smart and prudent investments have helped to contain costs so that our service is affordable (as Company witness Ather explains).

Q. Please elaborate on how KAWC has managed costs to keep rates affordable.

A. KAWC has managed its operations responsibly and effectively and will continue to uphold its commitment to make the investments needed to continue to provide safe and reliable water service to our customers at reasonable rates. The benefits of our infrastructure investment are not only vital to the health and welfare of our customers and the state, but they improve our economy and provide much needed jobs because every $1 million we spend in capital is expected to create or sustain up to 15 jobs.[1] These investments include improving the resiliency of the Company's distribution system and treatment plants, treatment changes to maintain regulatory compliance, technology investments that will integrate with existing systems to enhance service to customers, and management of source of supply and system demands. As noted by Company witness

[1] For every $1 million spent, 15.5 jobs are created (6.1 direct jobs and 9.4 indirect jobs). https://uswateralliance.org/wp-content/uploads/2023/09/Economic-Impact-of-Investing-in-Water-Infrastructure_VOW_FINAL_pages_0.pdf.

DeGrazia, the Company's rate base will have grown by over $181 million between the Company's last rate case and December 31, 2026, which is primarily due to the capital improvements that the Company has made to its system. By doing so, the Company has created or sustained approximately 2,800 jobs[2] during that time period. It is both our management initiatives as explained by Mr. Lewis and our prudent capital investments described by Mr. Magner that have enabled us to work smarter and more efficiently, thereby promoting affordability. I discuss the importance of affordability further below.

IV. VALUE OF WATER AND AFFORDABILITY

Q. In general, why is KAWC's proposed rate request reasonable?

A. The proposed rate increase is reasonable and appropriate because, as I previously discussed, it is driven primarily by the need to make the investments necessary to keep our water service safe and reliable over the long-term. If such investment is not made, our customers will be adversely impacted in the long run as the costs to make these investments will increase even more. For example, when mains are not replaced in a timely fashion, or equipment neglected, our costs rise, as unanticipated main breaks create water quality issues, unexpected expenses, and disruption to our communities. Similarly, equipment in need of replacement makes workers less efficient and can create safety issues.

Q. Has the Company evaluated the impact of the proposed rate increase on its customers?

A. Yes, we have. We know our water service is critical, and we know how important it is for that service to remain affordable. Despite the significant level of investment that the

[2] The jobs calculation is based on the 15.5 jobs multiplied by $181 million (2,805.5 jobs).

Company plans to make through the end of the forecasted test year, KAWC's water service will remain quite reasonable for our customers. The average residential water customer will pay less than 2 cents per gallon under proposed rates, which equates to about $1.87 per day for all their water needs for drinking, cooking, cleaning and sanitation. The Company's rate case proposals, if adopted, will result in customers benefitting from the Company's extensive capital investments while still paying reasonable rates.

Q. Has the Company performed an analysis of the affordability of its service under the proposed rates?

A. Yes. Company witness Ather has conducted a detailed analysis of the affordability of our historical and proposed rates and relates the median household income for customers in our service territory to our water bills over time. Even with the rate increases necessitated by our capital program, Ms. Ather's analysis demonstrates that our water service, overall, remains affordable under the Company's proposed rates. Her testimony compares historical average monthly water bills to monthly household income for KAWC customers from 2012 through 2026, both in absolute terms and in terms of bill to income ("BTI") ratios. Ms. Ather also analyzes the Company's proposed bills in this case and estimated median household income ("MHI") for our residential customers during the forecasted test year. Her analysis shows that BTI Ratios for the residential customer base have consistently been in the 0.57% to 0.59% of MHI range from 2023 to 2024 and are expected to be 0.68% under the Company's proposed rates in this case. This is a tangible demonstration that our customer bills will remain affordable even with the Company's requested rate increase.

Q. Is this trend in affordability reflective of the value of service that Kentucky-American's customers enjoy from the Company?

A. Yes. This trend in affordability is a result of the long-term investment and management practices of the Company and is a positive reflection of the fact that the investment strategies the Company has undertaken over time and the way that the Company has proactively managed the system is in the long-term best interests of our customers. Further, the Company's service will remain affordable, largely due to the Company's ability to manage its O&M expense and its targeted and timely infrastructure investments. The combination of proactive investment, steady O&M, and strong affordability demonstrates that the Company's management of the business and investment in the business delivers a high-value service to customers at affordable rates, which is in the long-term best interest of our customers.

Q. Can you elaborate on how Kentucky-American maintains the affordability of its water service?

A. Yes. As I noted previously, an important way that we maintain affordability is by continuously seeking to improve our business processes and make investments that improve operational efficiencies, and we have been successful in doing so. Further, as Mr. Lewis and Mr. Magner explain, we use targeted investments to permit us to work smarter and more efficiently as well as leveraging the power of our organization to both share learning on best practices and purchase equipment and supplies at advantageous terms. All of these help us manage and contain cost increases.

Q. Notwithstanding the overall affordability of Kentucky-American's rates, are there customers who might face affordability issues?

A. Yes, some of our customers face challenging economic circumstances. Thus, Ms. Ather also examined the affordability of our rates for our more vulnerable customers. Her assessment compares annualized bills for "basic water service" (i.e., service that is necessary and reasonable to meet basic household needs for drinking, cooking, sanitation, and general health service that does not include seasonal discretionary water use) to measures of household income for lower income groups. The Company estimates that there are approximately 14,324 residential water customers in our service areas that will see bills for basic water service above 2% of their household income, or approximately 12% of the Company's residential water customer base. For financially vulnerable customers, the Company continues to offer various assistance programs, which I describe below.

Q. What customer assistance programs does the Company offer its more vulnerable customers to maintain the affordability of its service?

A. KAWC offers several targeted customer assistance programs to help our most vulnerable customers. KAWC supports community low-income customers through KAWC's Help to Others (H2O) program. The H2O program is an emergency bill-paying assistance program funded by KAWC and donations from customers who want to help other customers in need. Customers who qualify may receive grants of up to $250 annually toward their KAWC bill. This emergency assistance program is administered by Community Action Council, an independent, non-profit organization. KAWC's residential customers also have the option of paying bills under the Company's budget billing plan, whereby the total service for the succeeding twelve-month period is estimated in advance, and bills are rendered monthly based on one-twelfth of the twelve-

month estimate. In addition, the Company offers its customers flexible payment arrangements through installment agreements if they are financially unable to pay a water service bill when due. The length of a payment arrangement can vary, and there is no limit to the number of installment agreements available to our customers provided that prior installment agreements terms have been fully met.

V. IMPROVING WATER EFFICIENCY

Q. Please explain the concept of water efficiency.

A. Water efficiency means using improved practices and technologies to deliver water service more efficiently. Water efficiency efforts include supply-side practices, such as more accurate and timely meter reading, leak detection, main replacement and repair programs, as well as demand-side strategies, such as public education programs to encourage the wise use of water. Improving water efficiency reduces operating costs (e.g., pumping and treatment) and reduces the need to spend capital developing new supplies and expanding our water infrastructure. It also reduces withdrawals from limited freshwater supplies, leaving more water for future use and improving the ambient water quality and aquatic habitat.

Q. How is the concept of improving water efficiency relevant to this case?

A. Improving water efficiency is a common thread throughout the entire fabric of this case. At its core, this case is about investments we are making to better serve our customers. Striving for increased water efficiency is evident in our infrastructure investments, such as the main and service replacements that help us provide a better, more reliable system. Our water efficiency efforts are demonstrated by investments in new technologies, and by improved business processes that help us work smarter and more efficiently and, by

extension, contribute to our cost control efforts. As discussed by Mr. Lewis, in addition to leveraging technology to improve water efficiency, the Company also focuses on other efforts, such as its water loss control program. As discussed by Mr. Magner, the investments we are making to better serve our customers are primarily in non-revenue producing investments, such as replacing aging infrastructure, enhancing reliability and resiliency, and water efficiency investments. For example, one of the projects highlighted in Company witness Magner's Direct Testimony involves the installation of higher efficiency pumps, which help reduce the amount of energy necessary to operate those pumps on a going forward basis. As we plan our investments, however, we know how important it is to balance the need for system improvements with what our customers pay for water service. Consequently, the Company continually strives to find more efficient and cost-effective ways to operate and maintain its business. For example, as Mr. Magner explains, the Company looks for value engineering opportunities when it plans projects to maximize their cost effectiveness. By doing so, the Company was able to accomplish a significant decrease for the installation of costly trenchless pipe installations, revisions to the proposed main alignment, and various other items related to the Millersburg Transmission Main project.

Q. You mention investments in new technology. Is KAWC still evaluating whether AMI is one of those technologies that will contribute to water efficiency?

A. Absolutely. I consider AMI to be a best practice in meter reading today and it is the meter reading technology of the future.[3] As the Company explained in its 2023 rate case, the

[3] The United States Environmental Protection Agency also recognizes the benefits of AMI noting that "AMI improves a utility's ability to collect frequent and accurate water usage data to improve billing, leak detection, and water resource management." *See* https://www.epa.gov/watersense/advanced-metering-infrastructure#utilities.

implementation of AMI would result in improved efficiencies associated with reducing the need for manual re-reads and the number of service orders, improve meter reading and bill accuracy, and improve leak detection and non-revenue water reduction efforts. It will also allow us to better serve our customers by empowering them with more timely information about their water use so they can make informed usage decisions, improve their water efficiency, and find potential issues and leaks much sooner.

Q. Considering the benefits noted above associated with implementing AMI, is KAWC seeking a CPCN for the implementation of AMI as part of this filing?

A. No. With that said, I do anticipate the Company filing an application for a Certificate of Public Convenience and Necessity sometime in the near future.

Q. You also mention the Company's water loss control program. How do the Company's efforts to reduce water loss contribute to improving water efficiency?

A. As explained by Mr. Lewis, the Company has implemented various practices and processes to help reduce water loss, including pressure management, accelerated infrastructure replacement, active leak detection, rapid response to breaks, fire service and water loss audits, and large meter testing and profiling. Water loss can be classified into two categories: (1) real loss which is water that escapes the distribution system from leaks or storage overflows; and (2) apparent loss due to meter inaccuracies, billing system data errors, and unauthorized consumption. The Company is tackling them both to help mitigate increases in operating costs associated with treating, pumping and delivering water to customers, as well as maintain the reliability and resiliency of the system (including water supplies).

Q. Does KAWC gain efficiencies from its affiliation with American Water?

A. Yes. Our affiliation with the American Water family of companies allows us to leverage the expertise, purchasing power and financial strength of the larger organization. For example, the American Water Works Service Company, Inc. ("Service Company") provides a wide spectrum of necessary, cost-effective, value-added services that enable KAWC to fulfill its responsibilities in a more cost-effective manner. These services include water quality testing at the state-of-the-art American Water Laboratory, as well as customer service, human resources, supply chain, legal, corporate finance, environmental, safety, engineering, communications, and information technology systems. By providing services on a shared basis at cost, the Service Company allows KAWC to provide its customers these necessary services and expertise more cost-effectively than the Company could on its own. Company witness Mr. Michale Adams demonstrates that the services that KAWC obtains from the Service Company are cost effective and reasonable in amount. In addition, American Water Capital Corp. ("AWCC") provides the Company with access to short-term loans, long-term borrowings, and cash management services at very competitive rates; rates that KAWC would not be able to obtain on its own due to our relatively small size. Ms. Gonzales discusses the benefits that AWCC provides the Company.

VI. COMMUNITY OUTREACH

Q. Please describe Kentucky-American's commitment to the communities it serves.

A. We enjoy a number of positive relationships in the communities we serve, including with the Lexington-Fayette Urban County Government, the city of Owenton in Owen County, and the cities of Millersburg and North Middletown in Bourbon County, in areas such as education, economic development, environmental protection, fire safety and assistance

for low-income families. The Company takes its commitment to the communities we have the privilege of serving very seriously. As such, we are community partners for numerous local initiatives and events. For example, in 2025 KAWC sponsored for the 40th year the Kentucky American Water Science Fair coordinated by Fayette County Public Schools, a district-level event attracting hundreds of elementary, middle and high school students from public, private, and home schools for a day of competition and fun, hands-on educational exhibits showcasing how the lessons students learn in their science classrooms applies to real life.

The Company also provides support for Reforest the Bluegrass, an annual riparian reforestation event in Fayette County during which hundreds of volunteers plant thousands of tree seedlings near an urban stream. Likewise, the Company has an ongoing partnership with the Lexington Division of Police and local Drug Enforcement Agency officials in offering two drug take-back days each year at the Company's Richmond Road location designed to assist citizens in keeping expired and no-longer-needed medications out of the wrong hands and out of waterways. The Company also sponsors or contributes to a number of initiatives that enhance our communities. For example, KAWC provides grants to local firefighting organizations to fund critical needs, such as additional hoses, communication equipment, and training. Since its inception in 2011, KAWC has contributed $108,000 to professional and volunteer fire and rescue organizations. With respect to having pride in our service area, KAWC assists with the operational expenses for the fountains at Triangle Park, which are a landmark in the City of Lexington, as well as for the soon-to-open Gatton Park on the Town Branch, also in Lexington. The company also supports a number of community festivals and events, such as Sweet Owen Days in Owen County, Christmas at

Mustard Seed Hill in Millersburg, Founders' Day at McConnell Springs and Lights over Lykins 4th of July Festival in Winchester. KAWC also provides its H2O to Go station, a portable trailer equipped with water dispensers which provides refreshing tap water at races, walks, festivals and other large outside events, and the company's mascot, Puddles the Duck, participates in events, as feasible, too. Our commitment to the areas we serve is not confined to monetary shareholder contributions.

KAWC has adopted a portion of Richmond Road near its offices in Lexington through the "Adopt-a-Highway" program sponsored by the Kentucky Transportation Cabinet. Many of our employees donate their time by performing trash pick-ups through this program to provide a clean environment and instill civic pride. Similarly, KAWC annually engages in a United Way campaign in which our employees support local charitable and non-profit organizations, and annually in September, employees participate in Americans in Action community service efforts such as volunteering time at local animal shelters and serving meals to the homeless, and helping with the gardens at shelters for victims of domestic violence.

Q. What are some of the specific activities Kentucky-American Water has partnered in?

A. Being a good neighbor is part of our mission at Kentucky-American. Many KAWC leadership team members give back to the community by serving on a number of boards and committees for civic and charitable causes, such as the American Red Cross; Bluegrass GreenSource; Commerce Lexington; Friends of McConnell Springs; the Junior League of Lexington; Kentucky Chamber of Commerce; the Lexington Children's Museum; The Nest-Center for Women, Children and Families; and the Urban League of Lexington. We work with a number of community-based partners throughout our service

areas to improve the overall quality of life where our employees and neighbors live and work.

In addition, KAWC highlights to nonprofit organizations in its service area the grant programs offered by the American Water Charitable Foundation (AWCF) so that they can apply for funds, if interested and eligible. Among the organizations, programs and projects to have received AWCF grant funds since 2023 are: Community Ventures for a new splashpad being constructed in Millersburg's town square; American Red Cross for storm and flood relief efforts; the Urban League of Lexington; the University of Kentucky/LFUCG Arboretum for a Wolf Run Watershed Educational Boardwalk; the Living Arts and Science Center; Ronald McDonald House; FoodChain for aquaponics education; Paris-Bourbon County YMCA; Meeting the Needs in Owenton; Lexington Public Library Foundation; Children's Advocacy Center of the Bluegrass; Scott County Humane Society and more.

Q. Does this conclude your prepared direct testimony?

A. Yes, it does.

VERIFICATION

COMMONWEALTH OF KENTUCKY)
) SS:
COUNTY OF FAYETTE)

The undersigned, Robert Burton, being duly sworn, deposes and says that he is the President of Kentucky-American Water Company, that he has personal knowledge of the matters set forth in the accompanying testimony for which he is identified as the responsible witness, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.

Robert Burton

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 9th day of May, 2025.

Molly McCleese Van Over
Notary Public

My Commission Expires:
July 31, 2025

Notary ID: KYNP26988

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-	**)**	
AMERICAN WATER COMPANY FOR AN	**)**	**CASE NO. 2025-00122**
ADJUSTMENT OF RATES	**)**	

DIRECT TESTIMONY OF MICHI CHAO

May 16, 2025

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Michi Chao, and my business address is 727 Craig Road, St. Louis, Missouri 63141.

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

A. I am employed by American Water Works Service Company (the "Service Company") as Principal Regulatory Analyst. The Service Company is a wholly owned subsidiary of American Water Works Company, Inc. ("American Water") that provides services to Kentucky-American Water Company ("Kentucky-American" or "the Company").

Q. Please state your educational and professional background.

A. I am a graduate of California State University of Los Angeles with a Bachelor of Science Degree in Finance. I received a Master's Degree in Business Administration from Webster University. I have over 25 years in the Finance function from various Companies such as Cedar Sinai Medical Group, Health Net, Millipore Sigma, Conagra Foods, Amdocs and American Water. I have been employed by American Water Works Service Company during two time periods. During September 2004 to January 2014, I served (3) roles, Regional Finance Planning and Analysis Director for the Central Region States (5 years); Finance Director for Missouri American Water (3 years) and Sr. Finance Manager for Missouri American Water (2 years). During my time as the Finance Director for Missouri American Water, I led the Finance and Rates departments. During February 2024, I returned to American Water Works Service Company, supporting the Regulatory department. Before returning to American Water Works, I was the Canada Finance lead at Amdocs.

Q. What are your current employment responsibilities?

A. My duties consist of preparing, assisting, and reviewing regulatory filings and related activities for some of the regulated subsidiaries of American Water Works Company, Inc. ("American Water"). My responsibilities include the preparation of written testimony, exhibits, and work papers in support of rate applications and other regulatory filings as well as responses to data requests for Kentucky-American and its regulated utility affiliates.

Q. Have you previously filed testimony before this or any other commission?

A. Yes. I have submitted testimony in the Missouri-American Water Company (Case No. WR-2010-0131; SR-2010-0135).

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

A. The purpose of my Direct Testimony is to support and explain the Company's forecasted operations and maintenance ("O&M") expense levels in several areas. I will discuss the level of expenses associated with Building Maintenance and Services, Maintenance Supplies and Supplies, Miscellaneous, Office Supplies, Postage, Rent, Telecommunication and Transportation for the 12-months ending December 31, 2026. Company Witness Robert J. Prendergast discusses the expenses associated with Labor and Related, Pension, Other Post-Employment Benefits, Production Expenses, Support Services, Insurance Other than Group, Uncollectible, Taxes Other than Income, Contract Services, and Customer Accounting.

Q. Are you sponsoring any exhibits?

A. Yes, I am co-sponsoring Exhibit 37 Schedule F.

II. OPERATING & MAINTENANCE EXPENSES

A. Building Maintenance and Services

Q. Please describe the O&M expenses related to Building Maintenance and Services expense.

A. The O&M expense associated with building maintenance and services includes the cost of electricity and heating for office facilities, groundskeeping, janitorial services, building security, trash, and water and wastewater services.

Q. Please explain the adjustment for Building Maintenance and Services.

A. The adjustment for building maintenance and services expense for the future test year ending December 31, 2026, includes a three-year average (2021 – 2024) O&M Growth Factor of 5.16%. The O&M growth factor applied is described in Company witness Prendergast's direct testimony. This growth factor is applied to all O&M expenses identified in my testimony, with the exception of Transportation and Postage expense. The forecasted test period building maintenance and services expense can be found in Exhibit 37, Schedule D-2.

B. Maintenance Supplies & Services

Q. Please describe the O&M expenses related to Maintenance Supplies and Services.

A. The O&M expense associated with maintenance supplies and services are the expenses associated with maintenance costs for the general operation of the business, plant maintenance, main breaks, and the amortization of deferred maintenance costs including the painting and rehabilitation of intakes, storage tanks, and hydrotreaters.

Q. Please explain the adjustment for Maintenance Supplies and Services O&M expense.

A. Most of this adjustment is due to the Company's proposed amortizations associated with tank maintenance, inspection, rehabilitation, hydrant painting, and intake structure maintenance. A fifteen-year amortization is requested for the projects going into service, consistent with the amortization term for these types of projects from prior cases. For the remaining portion of the maintenance supplies expense category, the Company applied the O&M growth factor of 5.16% discussed above plus preventative repairs and safety mandate costs for the future test year ending December 31, 2026. The preventative and mandated costs include safety electrical mandate, elevator car repair and UV treatment equipment. The forecasted test year for maintenance expense can be found in Exhibit 37, Schedule D-2.

C. Miscellaneous

Q. Please describe the O&M expenses related to Miscellaneous expense.

A. The O&M expenses for miscellaneous expense includes expenses for charitable contributions, community relations, membership dues, director fees, office power, heating and oil, as well as other miscellaneous expenses, such as laboratory supplies and customer education expenses.

Q. Please explain the adjustment for Miscellaneous expense.

A. The adjustment for miscellaneous expense for the future test year ending December 31, 2026 excludes charitable contributions and then applies the O&M Growth Factor of 5.16%. The forecasted test year miscellaneous expense can be found in Exhibit 37, Schedule D-2.

D. Office Supplies

Q. Please describe the operating expenses related to Office supplies.

A. The O&M expense for office supplies include expenses related to uniforms, software licenses, bank fees and various office supplies.

Q. Please explain the adjustment for Office Supply expense.

A. The adjustment to office expense for the future test year ending December 31, 2026, includes the O&M Growth Factor of 5.16% plus software license cost for ARCOS implementation. The forecasted test period expense for office supplies can be found in Exhibit 37, Schedule D-2.

E. Postage, Printing & Stationary

Q. Please describe the operating expenses related to Postage, Printing and Stationary.

A. The O&M expense for postage, printing and stationary are inclusive of expenses related to certain shipping and mailings and postage expense, other than those included in the customer accounting expense.

Q. Please explain the adjustment for Postage, Printing and Stationary expense.

A. The forecasted test period postage expense was projected using the 2024 actual postage expense with no adjustment. The forecast test period expense for postage expense can be found in Exhibit 37, Schedule D-2.

F. Rents

Q. Please describe the operating expenses related to Rents.

A. The O&M expense for Rents is associated with copy machines and other miscellaneous items, as well as office space, and easements.

Q. Please explain the adjustment for Rent expense.

A. The adjustment to rent expense for the future test year ending December 31, 2026, includes the O&M growth factor of 5.16%. The forecasted test year rent expense can be found in Exhibit 37, Schedule D-2.

G. Telecommunication

Q. Please describe the operating expense related to Telecommunication expense.

A. The O&M expense for telecommunication expense includes those expenses associated with office phone, wireless services and data lines used by the Company.

Q. Please explain the adjustment for Telecommunication expense.

A. The adjustment to telecommunication expense for the future test year ending December 31, 2026, includes the O&M growth factor of 5.16%. The forecasted test period telecommunications expense can be found in Exhibit 37, Schedule D-2.

H. Transportation

Q. Please describe the operating expenses related to Transportation.

A. The O&M expense for transportation expense includes costs associated with operating the Company's fleet vehicles in addition to general transportation costs. These costs include titling and registration fees, fuel costs, repairs and maintenance, and employee reimbursement for personal car use.

Q. Please explain the adjustment for Transportation expense.

A. The adjustments made to transportation expense include an increase of 5.27% based on a three-year average of increases (2021-2024). A portion of the transportation cost is capitalized and, therefore, excluded from O&M expense. The forecasted test period transportation expense can be found in Exhibit 37, Schedule D-2.

Q. Does this conclude your direct testimony?

A. Yes.

VERIFICATION

STATE OF MISSOURI)
) **SS:**
COUNTY OF ST. LOUIS)

The undersigned, Michi Chao, being duly sworn, deposes and says that she is Principal Regulatory Analyst for American Water Works Service Company, Inc., that she has personal knowledge of the matters set forth in the accompanying testimony for which she is identified as the responsible witness, and that the answers contained therein are true and correct to the best of her information, knowledge and belief.

Michi Chao

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 7 day of May, 2025.

Notary Public

My Commission Expires:
9/10/2027

ASHLEY RANDELL
Notary Public - Notary Seal
Jefferson County - State of Missouri
Commission Number 19775353
My Commission Expires Sep 10, 2027

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-	**)**	
AMERICAN WATER COMPANY FOR AN	**)**	**CASE NO. 2025-00122**
ADJUSTMENT OF RATES	**)**	

DIRECT TESTIMONY OF DOMINIC DEGRAZIA

May 16, 2025

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Dominic J. DeGrazia. My business address is 2300 Richmond Road, Lexington Kentucky 40502.

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

A. I am employed by American Water Works Service Company, Inc. ("AWWSC" or "Service Company") as Senior Manager Rates and Regulatory. Service Company is a wholly owned subsidiary of American Water Works Company, Inc. ("American Water") that provides services to Kentucky-American Water Company ("KAWC," "Kentucky-American" or "Company") and other American Water affiliates.

Q. Have you previously filed testimony at the Kentucky Public Service Commission?

A. I recently testified before the Commission regarding KAWC's Qualified Infrastructure Program ("QIP") in Case No. 2025-00099 and in Case No. 2024-00272 for QIP 5 Balancing Adjustment and QIP Year 6, respectively. I have also submitted testimony before the Pennsylvania Public Utility Commission and Tennessee Public Utility Commission.

Q. Please state your educational and professional background and state whether you are a member of any professional organizations.

A. I graduated from Arizona State University of Tempe, Arizona with a Master's in Business Administration in 2009, with a Finance emphasis. I also graduated from Drexel University of Philadelphia, Pennsylvania with a Bachelor of Science Degree in Finance and Economics in 2001. In September 2019, I earned the Chartered Financial Analyst credential. I began my employment in a contract role as a Financial Analyst with New

Jersey-American Water Company in October 2011, providing analytical support for the Financial Planning and Rates Department. In August 2013, I started full time with the Service Company, working as a Financial Analyst in the Financial Planning and Analysis Department. In this capacity, I supported the budgeting and consolidated reporting process for all American Water subsidiaries, including KAWC. In 2015, I was promoted to a Senior Financial Analyst role where I worked in the Budgeting & Internal Reporting Department. In this role, I was primarily responsible for consolidating the long-term financial plans for all American Water subsidiaries. In October 2018, I was promoted to Principal Regulatory Analyst in the Regulatory Services Department where my duties required me to prepare and present regulatory filings and participate in related activities for Pennsylvania-American Water Company and West Virginia-American Company, Inc. In March 2023, I was promoted to the position of Senior Manager Regulatory Services. In August 2024, I was promoted to my current position of Senior Manager, Rates and Regulatory for KAWC.

Q. What are your duties as senior manager rates & regulatory as it relates to Kentucky-American?

A. I am responsible for preparing and presenting KAWC's regulatory filings and related activities.

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

A. The scope of my testimony will include the following topics:

- Development of the Forecasted Test Year
- Minimum Standard Filing Requirements
- Revenue Requirement, Revenue Deficiency, and Average Bill

- Present Rate Revenue and Proposed Rate Revenue
- Regulatory Expense
- Rate Base
- Depreciation and Amortization

Q. Are you sponsoring any exhibits?

A. Yes, I am sponsoring the following exhibits attached to my Direct Testimony:

- Exhibit DD-1: Rate Case Exhibits and Sponsors
- Exhibit DD-2: ROR Proof
- Exhibit DD-3: Financial Summary without QIP

In addition to the exhibits attached to my direct testimony, I am also sponsoring or co-sponsoring the following filed exhibits:

- Exhibit 1 (Present tariffs - Kentucky American Water)
- Exhibit 2 (Proposed tariffs - Kentucky American Water)
- Exhibit 3 (Comparative sheets of Tariffs)
- Exhibit 4 (Certified copy of Articles of Incorporation and Amendments)
- Exhibit 5 (Certificate of Good Standing)
- Exhibit 6 (Certified copy of a Certificate of Assumed Name)
- Exhibit 7 (Customer Notices)
- Exhibit 8 (PSC Notice)
- Exhibit 9 (Rate base/capital reconciliation)
- Exhibit 10 (Testimonies (Cover Sheet))
- Exhibit 11 (Capital construction budget with 3-year forecast)

- Exhibit 13 (Annual and monthly budget for the 12 months preceding the filing date, the base period and the forecasted period)
- Exhibit 14 (Statement of Attestation)
- Exhibit 18 (Financial forecast - balance sheet)
- Exhibit 19 (Financial forecast - cash flow)
- Exhibit 20 (Financial forecast - revenue requirement)
- Exhibit 21 (Financial forecast - employee level)
- Exhibit 25 (Financial forecast - water sales (gallon))
- Exhibit 29 (Current chart of accounts)
- Exhibit 30 (Last 12 monthly managerial reports)
- Exhibit 31 (Monthly budget variance reports for 12 months pre-base period and as available, for base period and subsequent months M&D)
- Exhibit 32 (Independents auditor's annual opinion report and any written findings of material weaknesses in internal controls)
- Exhibit 33 (Summary of last depreciation study)
- Exhibit 34 (List of software, program and models used)
- Exhibit 35 (Affiliate, general or home office allocations)
- Exhibit 37 Schedule A (Jurisdictional financial summary for the base and forecast period)
- Exhibit 37 Schedule B (Rate Base)
- Exhibit 37 Schedule C (Operating Income)
- Exhibit 37 Schedule D (Summary of Adjustments to Operating Income)
- Exhibit 37 Schedule F (Social and service club dues, charitable contributions, initiation fees / country club expenses, employee party, outing & gift expense; customer service,

sales promotion & misc, advertising, professional services, rate case expense, civic, political, and related expenses)

- Exhibit 37 Schedule H (Gross revenue conversion factor)
- Exhibit 37 Schedule I (Comparative Income Statement and revenue statistics)
- Exhibit 37 Schedule K (Comparative financial data and earnings measures)
- Exhibit 37 Schedule L (Narrative description and explanation of all proposed tariff changes)

II. DEVELOPMENT OF THE FORECASTED TEST YEAR

Q. What is the base period in this case?

A. The Company has used a base period of the twelve months ending August 31, 2025. This base period data reflects six months of actual data (September 1, 2024, to February 28, 2025) and six months of forecasted data (March 1, 2025, to August 31, 2025).

Q. Please explain the development of the Company's forecasted test period.

A. The forecasted test period in this case is the twelve months following the suspension period ("forecasted test year"). For revenues and expenses, this is January 1, 2026, to December 31, 2026. For thirteen-month average rate base and capitalization, the period is from December 2025 to December 2026. The development of the forecasted test year is completed using the same assumptions and methodologies as used in the forecast developed by management except where otherwise explained in testimony or exhibits. The Company has made pro forma adjustments to the base period for any known or projected increases or decreases to arrive at the forecasted test year expenses, investments, financings, and revenues on which KAWC proposes to base its rates.

Q. Did the Company include the revenues and costs of any acquired systems in its rate case forecast?

A. No. KAWC does not have any acquired systems to include in its rate case forecast.

III. MINIMUM STANDARD FILING REQUIREMENTS

Q. Please describe the Company's Minimum Standard Filing Requirements.

A. Consistent with Kentucky law for forecasted test year rate cases, the Company has provided Exhibits 1 through 37 to the Application (Exhibit 37 includes Schedules A- N). Please see Exhibit DD-1, attached to this testimony, for a list of these exhibits and their sponsors.

IV. REVENUE REQUIREMENT, REVENUE DEFICIENCY, AND AVERAGE BILL

Q. Please describe Kentucky-American's revenue requirement.

A. The Company's revenue requirement is equal to the cost of providing water service to more than 138,000 customers throughout fourteen Kentucky counties (including Bourbon, Clark, Fayette, Franklin, Gallatin, Grant, Harrison, Jackson, Jessamine, Nicholas, Owen, Rockcastle, Scott, and Woodford Counties). Providing water service is a sprawling endeavor that starts with sourcing more than 15 billion gallons of surface water from Kentucky lakes and rivers, then treating it to meet or surpass drinking water standards and finally pumping and distributing it through over 2,400 miles of main to reach all homes, businesses, schools, and industries throughout KAWC's service territory. Along the way, the Company provides adequate capacity and storage to accommodate peak usage and to help protect our communities during fire events. The Company also provides customer service, monthly billing, 24-hour emergency call handling, and a self-service website. The Company monitors water quality for a host of contaminants and maintains the distribution

system by exercising valves, flushing hydrants, and repairing main breaks at all hours and in all weather conditions. All of these efforts support the Company's provision of safe, clean, reliable water service, sanitation, and fire protection service to customers.

To accomplish all of this, the Company incurs costs for which it seeks recovery through the ratemaking process. The Company's costs include a variety of operating expenses, depreciation and amortization, and various local, state, and federal taxes. The Company also must recover the costs of its investments and provide a return, at least equal to the cost of capital, on over $674 million in water infrastructure rate base that supports the Company's provision of service to customers.

Q. What is Kentucky-American's revenue requirement for the forecasted test year in this proceeding?

A. The Company's forecasted revenue requirement in this proceeding, equal to the cost of providing service, is approximately $163.5 million for the 12 months ending December 31, 2026. The Company's forecasted revenue requirement is found on Exhibit 37, Schedule A.

Q. Please describe how the Company's revenue deficiency is derived.

A. The Company's revenue deficiency, found on Exhibit 37, Schedule A, is measured as the difference between the forecasted revenue requirement and the Company's forecasted revenues at present rates. The Company's revenue deficiency in this proceeding is calculated to be approximately $26.9 million, which is an approximate 19.9 percent deficiency, in water service revenues, net of QIP revenues.

Q. Has Kentucky-American supplied a proof that the forecasted revenue requirement including recovery of the deficiency would equal the cost of providing service and allow KAWC the opportunity to recover the cost of capital?

A. Yes. Exhibit DD-2 also shows proof that the revenue requirement proposed in this application would result in the calculated proposed cost of capital or Rate of Return (ROR) of 7.86%, which reflects the proposed return on equity ("ROE") of 10.75%.

Q. What impact does the revenue deficiency of $26.9 million have on the Company's ability to recover its authorized ROE?

A. As illustrated in Exhibit DD-2,which is attached to my testimony, for the 12-months ending December 31, 2026, this revenue deficiency will result in the Company's ROE being at or about 5.05%, which is substantially below the authorized ROE adopted by the Commission in KAWC's most recent rate case and even further below the 10.75% ROE recommended by Company witness Ann Bulkley in this case.

Q. What are the key drivers of revenue deficiency and timing in this case?

A. The revenue deficiency in this case is fundamentally driven by over $181 million of rate base growth since the 2023 Rate Case, increases in certain operations and maintenance ("O&M") expenses, and increases in property taxes charged to the Company by state and local governments. In addition, the significant time it took to resolve the Companies' issues on rehearing in the last case and the decision not to make that resolution retroactive resulted in additional financial pressures to file this case at this time.

Q. What does this rate request mean for the average residential customer?

A. While the revenue deficiency (both on a dollar basis and percentage basis) seems significant, the average residential bill as we head into 2026 is still proposed to be under $60 per month,[1] which is less than 1 percent of median household income. This is a testament to the value the Company provides to its customers. As Company witness Ather

[1] As shown on Exhibit 37, Schedule N.

demonstrates in her direct testimony, the Company's rates have remained affordable for the majority of its customers, all while the Company has increased its level of investment in replacement of aging infrastructure and improvements to water treatment and distribution facilities to continue to provide high quality and reliable service to customers and the communities it serves. The Company has been able to do so in part through its effective management of the system, evidenced by its ability to keep increases in its operations and maintenance ("O&M") expense, net of production costs, below the rate of inflation for over a decade. While operating expenses have increased since the Company's 2023 rate case, the Company's overall O&M expenses remain reasonable. The Company is seeking to recover $51 million in O&M expenses. The Company evaluated its O&M expense, net of production costs, from 2014 through 2024. Over this time period the Company's O&M expense increases averaged an annual increase of 2.8%. This average annual increase is under the rate of inflation, measured by the Consumer Price Index for all Urban Consumers ("CPI-U"), which has grown at a rate of 3.0% per year over the same time period. The Company's ability to manage its O&M expense has benefited customers for over a decade now, and its ongoing efforts to mitigate inflationary increases in O&M expense will continue to benefit customers into the future.

Q. Is the Company proposing to roll in QIP into Base Rates in this application?

A. Yes. The Company proposes to "roll in" the rate base, expenses, and revenues associated with the QIP mechanism into base rates, as further described below.

V. PRESENT RATE REVENUE AND PROPOSED RATE REVENUE

Q. Has the Company calculated its forecasted test year revenues under current and proposed rates?

A. Yes. Company witness McClellan is sponsoring exhibits that show Kentucky-American's forecasted test year revenues under current and proposed rates and the associated revenue shortfall under current rates, as well as the makeup of Kentucky-American's Other Revenues.

Q. Has the Company proposed a rate design in this case?

A. Yes. Company witness McClellan's testimony describes Kentucky-American's rate design and rate design proposals for water service in this case.

Q. When were Kentucky-American's present water rates established?

A. Kentucky-American's present water rates were most recently established through Case No. 2023-00191. The rates were ordered on November 6, 2024, with an effective date of November 6, 2024. The present rates also reflect the current QIP Rider charge excluding the pending Balancing Adjustment proposed in Case No. 2025-00099.

Q. Can you explain in more detail how the current and proposed QIP rider charges are incorporated in the present rate revenues for the base period and forecasted test year?

A. The current QIP Charge of 11.06 percent as authorized in the QIP 6 Case No. 2024-00272, was applied to the present base rate revenues in the base period February to June 2025, and the proposed charge of 11.09 percent as proposed in the QIP 5 Balancing adjustment was applied for the period July 1st to August of the base period. Revenue at present water rates in the forecasted test year reflects an 8.14 percent QIP Rider charge representing the amount authorized in the QIP 6 Case No. 2024-00272, excluding the balancing adjustment of 2.92% and 0.03% effective until December 31st, 2025.

VI. RATE BASE

Q. What is Rate Base?

A. Rate Base measures the Company's net investment in the provision of water service. This investment includes the facilities and property for sourcing, treating, pumping, and distributing potable water for consumption, sanitation, and fire protection, as well as assets to support customer accounting, customer service and basic business operations. The additions to rate base include items such as:

- Utility Plant in Service ("UPIS"), Utility Plant Acquisition Adjustments ("UPAA") and
- Working Capital, Deferred Maintenance, and Deferred Debits;

Deductions from rate base include:

- Accumulated Depreciation
- Contributions in Aid of Construction ("CIAC") and Customer Advances
- Accumulated Deferred Income Taxes ("ADIT"), and
- Other Rate Base Elements

Each of these Rate Base components is described in my testimony below.

Q. Has the Company changed the methodology for calculating rate base from the approach advocated in its last case?

A. No. The Company utilized a thirteen-month average rate base calculation for the forecasted test year, as shown on Schedule B-1. Most of the rate base elements shown on this schedule were forecasted from actual per books data as of February 28, 2025, adjusted for changes expected through December 31, 2026. Total rate base for the base year (twelve months ending August 2025) is $639,318,516, as shown on Schedule B-1, page 1 of 2. Total average rate base for the forecasted test year is $679,394,979, as shown on Schedule B-1, page 2 of 2.

Q. Please describe each of the components of rate base.

A. Each component of rate base is described below:

UPIS

UPIS includes the original cost of all land, land rights, easements, structures, improvements, and other equipment that is used for the provision of water utility service. The rate case forecast begins with the UPIS balance per books as of February 28, 2025. The forecasted monthly UPIS balances were then calculated through December 31, 2026, by adding forecasted plant additions as they are placed into service and deducting forecasted plant retirements. Plant additions are addressed in greater detail in the testimony of KAWC witness John Magner. The 13-month average UPIS balance from December 31, 2025, through December 31, 2026, was then calculated, to arrive at the average value for the forecasted test year. The thirteen-month average UPIS in the forecasted test year is $1,146,516,777. Supporting schedules and analysis can be found on Schedule B-1 and B-2.

WORKING CAPITAL AND OTHER WORKING CAPITAL

Working Capital and Other Working Capital are included in a utility's rate base to recognize the cost of funding the lag between the time utility service is rendered to the customer and the time it takes to collect revenues from the customer to pay for that service. In other words, investors had to provide "upfront" capital to fund the daily operations of the business before customers pay their bills. The Working Capital calculations can also properly reflect the impact of any difference in time between when expenses are accrued, and the associated cash is disbursed. Working Capital is calculated through two separate processes. The first process measures average Materials and Supplies balances, the result

of which is shown as "Other Working Capital" on Exhibit 37, Schedule B-1. The second process is a Lead / Lag Study, the result of which is shown as "Working Capital" on Exhibit 37, Schedule B-1. Materials and Supplies are calculated for the forecasted test year by averaging 13 months ended February 2025 of actual balances in the Materials and Supplies account. The average in this case is $4,498,367 and this is used to estimate the thirteen-month average for the forecasted test year. This is shown as "Other Working Capital" on Exhibit 37, Schedule B-1 and as "Materials and Supplies" on Exhibit 37, Schedule B-5.

The second process, the Lead/Lag Study, was performed based on historical data for the twelve months ended December 31, 2024, and used the same methodology as in the prior case.

The determination of the amount of Lead/Lag working cash for a specific item is a complex calculation. As more fully explained in the Direct Testimony of KAWC witness Harold Walker, the daily Lead/Lag Factor is calculated by starting with Revenue Lag Days, subtracting Expense Lag Days and Check Clear Time Days for each expense category to arrive at the Net Interval. This Net Interval is then multiplied by the daily amount of forecasted operating funds. The total Lead Lag Working Capital was calculated to be $2,788,000 and is shown as "Working Capital" on Exhibit 37, Schedule B-1. More detailed information is also shown on Exhibit 37, Schedule B-5.

DEFERRED MAINTENANCE

This item is calculated as an average of the thirteen-month balance of deferred maintenance projects based upon both actual and forecasted projects. These projects include the repainting and repairs of system water storage tanks, and other major repairs as shown in the workpapers that support Schedule B. These types of deferred maintenance expenses

have been afforded rate base treatment by the Commission in past proceedings. Based upon these actual expenditures and the forecasted expenditures for December 2025 through December 2026, as adjusted for amortizations, the Company has developed a thirteen-month average of these deferred maintenance items totaling $10,069,899. Amortization of the balances are set at 15 years.

DEFERRED DEBITS

The Company is requesting a rate base addition of $827,661 for Deferred Debits. This is for Source of Supply cost and was approved for rate base treatment and a 40-year amortization in Case No. 2000-00120. The unamortized balance is included in rate base and is offset by applicable deferred taxes. The Deferred Debit balance is shown on Exhibit 37, Schedule B-1.

UPAA

The Company is proposing to include a UPAA amount of $44,168 in rate base in this proceeding associated with the North Middletown Water acquisition. The forecasted test year amount is shown on Exhibit 37, Schedule B-1.

ACCUMULATED DEPRECIATION

The accumulated depreciation component of rate base includes both accumulated life depreciation and accumulated cost of removal. The accumulated depreciation forecast begins with the actual balances as of February 28, 2025 and were then calculated by month through the end of the forecasted test year utilizing the depreciation rates authorized in Rate Case Docket 2023-00191.

Additional monthly adjustments were made to the accumulated depreciation to account for plant retirements, salvage credits, and the cost of removals. Under utility plant

accounting, when an asset is retired, the UPIS is reduced by the original cost of the asset and the accumulated depreciation account is reduced by an equal amount. When scrap value is obtained from retired plant, the salvage amount is added to the depreciation liability. The cost of removal is based on an average of the past three years and these expenditures reduce the liability. The forecasted test year accumulated depreciation was then calculated by averaging the month end balances from December 2025 through December 2026. The 13-month average forecast for Accumulated Depreciation is calculated at ($266,958,305), as shown on Schedule B-1. Additional detail can be found on Exhibit 37, Schedule B-3.

CIAC

CIAC reflects non-refundable money or physical property that is received from third parties, and thus is not considered to be investor supplied capital. An example would be a portion of main that was relocated to accommodate road alignment changes and the relocation was funded by the Kentucky Transportation Cabinet or a local municipality. Tap fees paid by new Kentucky-American customers are another example.

With the enactment of the Tax Cuts and Jobs Act in 2017, all contributions are taxable. Consequently, all CIAC receipts are forecasted to be grossed up for income tax, which offsets the cost of the corresponding tax assets to the general customer base. CIAC balances are calculated monthly by increasing the actual February 28, 2025, balance for forecasted grossed-up contribution, less amortization of the contributed funds. The thirteen month-end balances for the forecasted test year ending December 31, 2026, are averaged to arrive at the forecasted test year amount of ($76,426,172). CIAC is shown on Exhibit 37, Schedules B-1 and B-6.

CUSTOMER ADVANCES

Customer advances are a reduction to rate base to recognize money collected, typically from developers, for the installation of new mains. The funds are held in an account and refunded to the contributor / developer as new customers tap onto the extended main. By having a developer pay for the initial main extension investment, KAWC avoids the cost of financing speculative developments until new customers materialize. Like other rate base components, the forecasted test year customer advances amount is developed starting with the February 28, 2025 balance, then forecasting monthly by adding forecasted receipts from developers, and deducting forecasted refunds.

Like CIAC, Customer Advances are taxable due to the Tax Cuts and Jobs Act. KAWC collects additional funds from developers to recognize the taxability of funds received. The forecast is consistent with this practice and includes gross-up on all expected Customer Advances. This offsets the cost of the corresponding tax assets to the general customer base.

The thirteen-month end balances from December 2025 through December 2026 are then averaged, yielding a value of ($22,711,253). Customer advances are shown on Exhibit 37, Schedules B-1 and B-6.

ADIT

The Company included ($124,201,902) of accumulated deferred income taxes in its requested rate base in this case. This includes both the forecasted ADIT balance, as well as the forecasted balance of excess ADIT, which is a regulatory liability associated with changes in tax rates. The largest portion of this excess ADIT is associated with the TCJA.

The value of ADIT (including excess ADIT) in the Company's forecasted rate base is reflected on Exhibit 37, Schedules B-1, and B-6.

UNAMORTIZED ITC

This item is calculated as an average of the thirteen-month end balance of unamortized 3% investment tax credits ("ITCs") for the forecasted test year ending December 31, 2026. The Company also has 4% and 10% investment tax credits on its books, and these are reflected in the Company's capital structure, as set forth in Exhibit 37 – J (which is supported by Company witness Jennifer Gonzales. This rate base treatment of 3% ITC is consistent with previous rate cases. The thirteen-month average amount in the forecasted test year of 3% ITC is ($2). The values may be seen on Exhibit 37, Schedules B-1 and B-6.

Q. Are the components of the Rate Base consistent with prior applications?

A. Yes, with one exception. Construction Work in Progress (CWIP) balance was not included in rate base in this application, which follows the Rate Case order 2023-00191 removing CWIP from rate base. CWIP is the value of utility plant that is under construction, but which has not yet been placed into service. In prior rate cases, KAWC has included CWIP in rate base and has calculated the Allowance of funds used During Construction (AFUDC) based on the CWIP eligible balances. The present rate and forecasted revenues were then reduced by this AFUDC amount. With the exclusion of CWIP in rate base, KAWC has subsequently removed the AFUDC offset to revenues.

VII. DEPRECIATION AND AMORTIZATION

Q. Could you please describe the depreciation expense requested for recovery in this case?

A. Depreciation expense was calculated for the forecasted test year by multiplying the forecasted UPIS balances for each plant account by the life depreciation rates and cost of removal accrual rates authorized in Case No. 2023-00191. This is offset by CIAC amortization, which is similarly calculated by multiplying gross CIAC balances by their amortization rates. The CIAC amortization essentially offsets the depreciation expense resulting from assets funded by CIAC. Depreciation expense is shown on Exhibit 37, Schedule C.1.

Q. Could you please describe the amortization expense requested for recovery in this case?

A. Amortization expense is adjusted from the base year to remove disallowed items (some previous UPAA amortization and a regulatory asset amortization), and to make slight adjustments to align the forecast for amortized property losses and AFUDC. Amortization expenses are shown on Exhibit 37, Schedule C.1.

VIII. REGULATORY EXPENSE

Q. Please describe the operating expenses related to and any adjustments for regulatory expense.

A. The purpose of this adjustment is to annualize rate case expense for the costs related to this rate filing. Estimated costs related to this rate filing include legal fees, consultants' costs, travel expenses, and other expenses. KAWC proposes that these costs be amortized over a two year period. The forecasted test year regulatory expense can be found in Exhibit 37, Schedules C and D, and also Schedule F-6.

Q. Should reasonable and prudently incurred rate case expense be recovered?

A. Yes. The cost of litigating a rate case is a normal and essential cost of service for any regulated utility and should be treated as such. As a regulated utility, KAWC has a legal obligation to provide safe and adequate service to its customers at just and reasonable rates. Periodic rate changes are necessary to support the Company's continued provision of safe and adequate service to its customers. The way that KAWC changes its base rates is through the rate case process.

IX. QUALIFIED INFRASTRUCTURE PROGRAM ("QIP")

Q. Please discuss briefly the history of QIP and how the current QIP works.

A. The QIP rider is a regulatory tool providing recovery of the costs of capital, depreciation, expenses and taxes associated with qualified infrastructure investment between base rate case filings. The Commission approved KAWC's QIP in Case No. 2018-00358 and in the rehearing final order in Case No. 2023-00300 granted KAWCs request to align the QIP filing schedule with a calendar year using the schedule below.

Filing	Filing Date	QIP Period Start / Rates Effective	QIP Period End	Balancing Adjustment
QIP 5*	5/31/2024	9/1/2024	12/31/2024	None*
QIP 6	8/31/2024	1/1/2025	12/31/2025	QIP 4
QIP 7	8/31/2025	1/1/2026	12/31/2026	QIP 5
QIP 8	8/31/2026	1/1/2027	12/31/2027	QIP 6

*Filing to remove QIP 3 Balancing Adjustment and proposing no new QIP investments.

KAWC has filed annual applications for both QIP and the balancing adjustments. KAWC's application for QIP 6 was for calendar year 2025 and was set forth in Case No. 2024-00272. The QIP 5 Balancing Adjustment has been proposed in pending Case No.

2025-00099 and only covers the under collection of revenues for the period September 1, 2024, through December 31, 2024.

Q. What is the Company proposing will happen to the QIP Rider upon approval of new rates in this proceeding?

A. The QIP Rider charge proposed by the Company in Case No. 2025-0099 will be reset to zero as of the effective date of the new base rates in this proceeding. At that time, the base rates would be providing recovery of the annual costs that had previously been recovered through the QIP.

Q. Will the Company propose a Balancing Adjustment Filing for QIP Year 6 and what will be reconciled in that proposal?

A. Yes. In accordance with the scheduled filings as authorized in Case No. 2023-00300, the Company plans to file a balancing adjustment for QIP 6 by March 31st, 2026, that will reconcile the revenues collected for the January 1, 2025 to December 31, 2025 time period and not include reconciliation of the projected program costs with actuals. The calculated over or under collection would be effective July 1, 2026.

Q. Will the Company file an application for the QIP 7 and what will it include?

A. Yes. In accordance with the scheduled filings authorized in Case No. 2023-00300, the Company plans to file an application for QIP 7 on August 31, 2025, to address any future changes or clarifications at that time. KAWC does not plan on proposing new pipeline projects in the application.

Q. Is the Company proposing any changes or clarifications to the QIP Rider in this proceeding?

A. No. KAWC plans to address any changes or clarifications in future QIP filings in accordance with the scheduled filings authorized in Case No. 2023-00300.

Q. Is the Company proposing any changes to how the QIP will be billed to customers?

A. No. The QIP will still be expressed as a percentage of water and fire service charges for each customer class included in the QIP tariff. It would be applied to all water revenue (meter fees, fire service fees, public or private hydrant fees, and volumetric water sales), but prior to the inclusion of any other surcharge or tax (such as franchise fees or Kentucky River Authority ("KRA") fees). The QIP will continue to be reflected as a line item on each customer's bill.

Q. If the QIP Rider Charge is not reset and included in base rates in this proceeding, please describe the revenue requirement and deficiency.

A. The Company's forecasted revenue requirement, equal to the cost of providing service, in this proceeding without the reset of the QIP Rider Charge, is approximately $152.9 million for the 12 months ending December 31, 2026. The Company's forecasted revenue requirement is found in Exhibit DD-3 attached to my testimony. The Company's revenue deficiency in this scenario is calculated to be approximately $26.3 million, which is an approximate 20.77 percent deficiency.

Q. Why is the proposed revenue requirement included in Exhibit DD-3 for QIP different than the current QIP authorized revenue.

A. The revenue requirement for QIP as shown on Exhibit DD-3 incorporates the QIP 6 present rate authorized revenues excluding the balancing adjustment, the depreciation and property taxes, the proposed conversion factor, and the QIP 6 rate base at the proposed rate of return

at 7.86 percent versus the current authorized rate at return of 7.26 percent. This resulted in a different amount of proposed revenue requirement than the current authorized revenue.

Q. Why is KAWC proposing to roll-in the current QIP into base rates?

A. The roll-in of the current QIP will lessen the administrative burden of tracking the current level of QIP projects and the separation of costs. The roll-in will also allow regulators to view the revenue requirement holistically and allows QIP costs to be part of standard full cost of service and creates rate stability. In addition, the QIP costs have been subjected to rigorous review in the prior QIP proceedings.

Q. Does this conclude your prepared direct testimony?

A. Yes, it does.

VERIFICATION

COMMONWEALTH OF KENTUCKY)
) SS:
COUNTY OF FAYETTE)

The undersigned, Dominic DeGrazia, being duly sworn, deposes and says that he is a Senior Manager Rates and Regulatory for Kentucky-American Water Company, that he has personal knowledge of the matters set forth in the accompanying testimony for which he is identified as the responsible witness, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.

Dominic DeGrazia
Dominic DeGrazia

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 12th day of May, 2025.

Molly McCleese Van Over
Notary Public

My Commission Expires:
July 31, 2025
Notary ID: KYNP26988

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2025-00122
RATE CASE EXHIBITS AND SPONSORS

Exhibit	**Sponsor**
Exhibit 1 Present tariffs - Kentucky American Water	D. DeGrazia
Exhibit 2 Proposed tariffs - Kentucky American Water	D. DeGrazia
Exhibit 3 Comparative sheets of Tariffs	D. DeGrazia
Exhibit 4 Certified copy of Articles of Incorporation and Amendments	D. DeGrazia
Exhibit 5 Certificate of Good Standing	D. DeGrazia
Exhibit 6 Certified copy of a Certificate of Assumed Name	D. DeGrazia
Exhibit 7 Customer Notices	D. DeGrazia
Exhibit 8 PSC Notice	D. DeGrazia
Exhibit 9 Rate base/capital reconciliation	D. DeGrazia and J. Gonzales
Exhibit 10 Testimonies (Cover Sheet)	D. DeGrazia
Exhibit 11 Capital construction budget with 3-year forecast	J. Magner
Exhibit 12 Description of forecast factors (Cover Sheet)	D. DeGrazia
Exhibit 13 Annual and monthly budget for the 12 months preceding the filing date, the base period and the forecasted period	D. DeGrazia and J. Magner
Exhibit 14 Statement of Attestation	R. Burton
Exhibit 15 Information about major construction projects > 5% of total	J. Magner
Exhibit 16 Information about other construction projects < 5% of total	J. Magner
Exhibit 17 Financial Forecast – operating income	D. DeGrazia
Exhibit 18 Financial forecast - balance sheet	D. DeGrazia
Exhibit 19 Financial forecast - cash flow	D. DeGrazia
Exhibit 20 Financial forecast - revenue requirement	D. DeGrazia
Exhibit 21 Financial forecast - employee level	R. Prendergast
Exhibit 22 Financial forecast - labor cost changes	R. Prendergast
Exhibit 23 Financial forecast - capital structure requirements	J. Gonzales
Exhibit 24 Financial forecast - rate base	D. DeGrazia
Exhibit 25 Financial forecast - water sales (gallon)	M. McClellan
Exhibit 26 Financial forecast - customer forecast	M. McClellan
Exhibit 27 Most recent stock or bond prospectus (Most recent)	J. Gonzales
Exhibit 28 Annual reports to shareholders	D. DeGrazia
Exhibit 29 Current chart of accounts	D. DeGrazia
Exhibit 30 Last 12 monthly managerial reports	D. DeGrazia
Exhibit 31 Monthly budget variance reports for 12 months pre-base period and as available, for base period and subsequent months M&D	D. DeGrazia
Exhibit 32 Independents auditor's annual opinion report and any written findings of material weaknesses in internal controls	D. DeGrazia

Exhibit 33 Summary of last depreciation study	D. DeGrazia
Exhibit 34 List of software, program and models used	D. DeGrazia
Exhibit 35 Affiliate, general or home office allocations	R. Prendergast
Exhibit 36 Cost of service study	M. McClellan
Exhibit 37 Schedule A Jurisdictional financial summary for the base and forecast period	D. DeGrazia
Exhibit 37 Schedule B Rate Base	D. DeGrazia
Exhibit 37 Schedule C Operating Income	D. DeGrazia
Exhibit 37 Schedule D Summary of Adjustments to Operating Income	D. DeGrazia
Exhibit 37 Schedule E Income Tax Expense	L. Schlessman
Exhibit 37 Schedule F Social and service club dues, charitable contributions, initiation fees / country club expenses, employee party, outing & gift expense; customer service, sales promotion & misc, advertising, professional services, rate case expense, civic, political, and related expenses.	D. DeGrazia and M. Chao
Exhibit 37 Schedule G Payroll costs, analysis, and executive compensation	R. Prendergast
Exhibit 37 Schedule H Gross revenue conversion factor	D. DeGrazia
Exhibit 37 Schedule I Comparative Income Statement and revenue statistics	D. DeGrazia and M. McClellan
Exhibit 37 Schedule J Cost of capital	J. Gonzales
Exhibit 37 Schedule K Comparative financial data and earnings measures	D. DeGrazia and J. Gonzales
Exhibit 37 Schedule L Narrative description and explanation of all proposed tariff changes	D. DeGrazia
Exhibit 37 Schedule M Revenue summary and billing analysis	M. McClellan
Exhibit 37 Schedule N Typical bill comparison under present and proposed rates	M. McClellan

Kentucky American Water Company
Case No. 2025-00122
ROR Proof

Line No.	Description	Base Period Ending August 31, 2025	Adjustment for Forecast at Present Rates	Forecast Year Ending December 31, 2026 At Present Rates	Adjustment for Proposed Rates	Forecast Year at Proposed Rates
1	**Total Operating Revenues**	**$139,664,647**	**($3,104,794)**	**$136,559,853**	**$26,936,338**	**$163,496,192**
2						
3	**Total O&M Expenses**	**$48,743,951**	**$2,282,973**	**$51,026,924**	**$125,695**	**$51,152,620**
4						
5	**Other Expenses**					
6	Depreciation & Amortization	$29,749,437	$5,318,259	$35,067,695	$0	$35,067,695
7	State Income Tax	1,911,512	(775,079)	1,136,434	1,338,439	2,474,873
8	Federal Tax	6,953,553	(3,404,151)	3,549,403	5,340,373	8,889,776
9	General Taxes	9,287,839	3,574,085	12,861,924	41,859	12,903,783
10	**Total Other Expense (Sum of Lines 6-9)**	**$47,902,341**	**$4,713,115**	**$52,615,456**	**$6,720,671**	**$59,336,127**
11						
12	**Total Expenses (Line 3 + 10)**	**$96,646,293**	**$6,996,088**	**$103,642,380**	**$6,846,366**	**$110,488,747**
13						
14	**Utility Operating Income (Line 1 minus 12)**	**$43,018,354**	**($10,100,882)**	**$32,917,473**	**$20,089,972**	**$53,007,445**
15						
16	**Interest Expense / Other Income/Expense**					
17	Interest Expense	$13,681,416		$14,904,129		$14,904,129
18	Other Income/Expense	191,796		202,318		202,318
19	**Total Other Income/Expense (Line 17 + 18)**	**$13,873,212**		**$15,106,448**		**$15,106,448**
20						
21	**Net Income (Line 14 minus 19)**	**$29,145,142**		**$17,811,025**		**$37,900,997**
22						
23	**Rate Base**	**$639,318,516**		**$674,394,979**		**$674,394,979**
24						
25	**Equity Weighting**	**52.54%**		**52.26%**		**52.26%**
26						
27	**ROE (Line 21 / (Line 23 * Line 25))**	**8.68%**		**5.05%**		**10.75%**
28						
29	**ROR (Line 14 / 23)**	**6.73%**		**4.88%**		**7.86%**
30						

Kentucky American Water Company
Case No. 2025-00122
Jurisdictional Financial Summary for the Base and Forecast Period Detailing Derivation of the Requested Revenue Increase
Without QIP

Line #		Forecast Period Ending December 31, 2026	QIP Ending December 31,2025	Forecast Period without QIP Ending December 31, 2026
1				
2	**Present Rate Utility Operating Income:**			
3				
4	**Operating Revenue at Present Rates:**	$136,559,853	$9,949,870	$126,609,983
5				
6	**Less: Deductions:**			
7	Operating and Maintenance	$51,026,925	$46,426	$50,980,499
8	Depreciation	34,995,892	1,274,298	33,721,595
9	Amortization of UPAA	14,723	-	14,723
10	Amortization Expense	57,080	-	57,080
11	State Income Taxes	1,136,434	277,965	858,469
12	Federal Income Taxes	3,549,403	1,109,081	2,440,322
13	Investment Tax Credits	-	-	-
14	General Taxes:	12,861,924	1,252,118	11,609,806
15	**Total Deductions (Sum Lines 7 - 14):**	$103,642,381	$3,959,889	$99,682,492
16				
17	**Present Rate Operating Income (Line 4 - Line 15):**	$32,917,472	$5,989,981	$26,927,491
18				
19				
20		**Forecast Period**	**QIP**	**Forecast Period without QIP**
21	**Revenue Requirement and Increase Comparison:**	**Ending December 31, 2026**		**Ending December 31, 2026**
22				
23	Net Original Cost Rate Base	$674,394,979	$82,249,891	$592,145,088
24	Rate of Return	7.86%	7.86%	7.86%
25				
26	**Operating Income Required (Line 23 x Line 24):**	$53,007,445	$6,464,841	$46,542,604
27				
28	Less: Operating Income at Present Rates (Line 17):	$32,917,472	$5,989,981	$26,927,491
29				
30	**Increase in Operating Income Required (Line 26 - Line 28)**	**$20,089,973**	**$474,860**	**$19,615,113**
31				
32	**Gross Revenue Conversion Factor**	134.0785%	134.0785%	134.0785%
33				
34	**Requested Revenue Increase (Line 30 x Line 32)**	**$26,936,340**	**$636,686**	**$26,299,654**
35				
36	**Percent Increase over Operating Revenue at Present Rates (Line 34 / Line 4):**	**19.72%**	**6.40%**	**20.77%**
37				
38	**Revenue Requirement (Line 4 + Line 34)**	**$163,496,192**	**$10,586,556**	**$152,909,637**

Exhibit DD-3

KENTUCKY-AMERICAN WATER COMPANY
Case No. 2025-00122
RATE BASE SUMMARY WITHOUT QIP
Forecast Year at December 31, 2026

Line No.	Rate Base Component	A 13 Month Avg Forecasted Period Amount	B 13 Month Avg QIP Rate Base	A -B=C 13 Month Avg Forecasted without QIP
1				
2	Utility Plant In Service	$1,146,516,777	$94,834,878	$1,051,681,899
3				
4	Property Held for Future Use	0	0	0
5				
6	Utility Plant Acquisition Adjustments	44,168	0	44,168
7				
8	Accumulated Depreciation	(266,958,305)	3,097,380	(270,055,686)
9				
10				
11				
12	Net Utility Plant In Service	879,602,640	97,932,258	781,670,382
13				
14				
15	Construction Work in Progress	0	0	0
16				
17	Working Capital Allowance	2,788,000	0	2,788,000
18				
19	Other Working Capital Allowance	4,498,367	0	4,498,367
20				
21	Contributions in Aid of Construction	(76,426,172)	0	(76,426,172)
22				
23	Customer Advances	(22,711,253)	0	(22,711,253)
24				
25	Deferred Income Taxes	(124,201,902)	(15,682,367)	(108,519,535)
26				
27	Deferred Investment Tax Credits	(2)	0	(2)
28				
29	Deferred Maintenance	10,069,899	0	10,069,899
30				
31	Deferred Debits	827,661	0	827,661
32				
33	Other Rate Base Elements	(52,259)	0	(52,259)
34				
35	Jurisdictional Rate Base	$674,394,979	$82,249,891	$592,145,088

Kentucky-American Water Company
Case No. 2025-00XXX
Jurisdictional Operating Income Summary for Forecasted Periods
Without QIP

Line #	Description	[A] Forecasted Year at Proposed Rates*	[B] Less: QIP Revenues in Present Rates	[C] Less: QIP Revenues at Proposed Rates	[D]=[A]-[B]-[C] Forecasted Year at Proposed Rates without QIP
	Operating Revenues				
1	Water Revenues - Base	$ 151,111,210	$ -	$ 636,686	$ 150,474,524
2	Water Revenues - QIP	$ 9,949,870	$ 9,949,870		$ -
3	Total Water Revenues	$ 161,061,080	$ 9,949,870	$ 636,686	$ 150,474,524
4	Total Other Revenues	$ 2,435,111	$ -	$ -	$ 2,435,111
5	AFUDC	$ -	$ -	$ -	$ -
6	Total Operating Revenues	$ 163,496,191	$ 9,949,870	$ 636,686	$ 152,909,635
7					
8	**Operating Expenses**				
9	Purchased Water	$ 201,875			$ 201,875
10	Fuel and power	$ 6,040,520			$ 6,040,520
11	Chemicals	$ 4,632,446			$ 4,632,446
12	Waste disposal	$ 714,836			$ 714,836
13	Salaries and Wages	$ 9,528,061			$ 9,528,061
14	Pension	$ 198,279			$ 198,279
15	OPEB	$ (727,095)			$ (727,095)
16	Group Insurance	$ 1,923,171			$ 1,923,171
17	Other Benefits	$ 811,569			$ 811,569
18	Support Services	$ 14,821,708			$ 14,821,708
19	Contract Services	$ 1,728,444			$ 1,728,444
20	Building Maintenance and Services	$ 1,628,524			$ 1,628,524
21	Telecommunications	$ 325,955			$ 325,955
22	Postage, Printing, and Stationary	$ 46,859			$ 46,859
23	Office Supplies and Services	$ 342,626			$ 342,626
24	Advertising and Marketing	$ -			$ -
25	Employee Related Expense	$ 236,418			$ 236,418
26	Miscellaneous Expense	$ 1,161,823			$ 1,161,823
27	Rents	$ 66,516			$ 66,516
28	Transportation	$ 600,763			$ 600,763
29	Uncollectible Accounts	$ 752,412	$ 46,426	$ 2,971	$ 703,016
30	Other Customer Accounting	$ 120,150			$ 120,150
31	Regulatory Expense	$ 941,449			$ 941,449
32	Insurance Other than Group	$ 2,063,676			$ 2,063,676
33	Maintenance Supplies and Services	$ 2,991,634			$ 2,991,634
34	Total Operating Expenses	$ 51,152,620	$ 46,426	$ 2,971	$ 51,103,223
35					
36	**Other Expenses**				
37	Depreciation	$ 34,995,892	$ 1,274,298	$ -	$ 33,721,595
38	Amortization of UPAA	$ 14,723	$ -	$ -	$ 14,723
39	Amoritzation Expense	$ 57,080	$ -	$ -	$ 57,080
40	State Income Taxes	$ 2,474,873	$ 277,965	$ 31,636	$ 2,165,272
41	Federal Income Taxes	$ 8,889,776	$ 1,109,081	$ 126,229	$ 7,654,465
42	Investment Tax Credits	$ -	$ -	$ -	$ -
43	General Taxes	$ 12,903,783	$ 1,252,118	$ 990	$ 11,650,674
44	Total Other Expenses	$ 59,336,127	$ 3,913,463	$ 158,855	$ 55,263,809
45					
46	Total Expenses	$ 110,488,747	$ 3,959,889	$ 161,826	$ 106,367,032
47					
48	**Net Operating Income**	**$ 53,007,443**	**$ 5,989,981**	**$ 474,860**	**$ 46,542,603**
49					
50	Interest Expense	$ 14,904,129	$ 1,817,723	$ -	$ 13,086,406
51	Other Income/Expense	$ 202,318	$ -	$ -	$ 202,318
52					
53	**Net Income**	**$ 37,900,996**	**$ 4,172,258**	**$ 474,860**	**$ 33,253,878**
54					
55	Rate Base	$ 674,394,979	82,249,891		$ 592,145,088
56	Equity Weighting	52.26%			52.26%
57	ROE	10.75%			10.75%
58	ROR	7.86%		7.86%	7.86%

*Exhibit 37, Schedule C-1 Column I includes the roll-in of QIP 6 expenses and capital at proposed rates.

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-	**)**	
AMERICAN WATER COMPANY FOR AN	**)**	**CASE NO. 2025-00122**
ADJUSTMENT OF RATES	**)**	

DIRECT TESTIMONY OF JENNIFER GONZALES

May 16, 2025

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Jennifer Gonzales. My business address is 1 Water Street, Camden, NJ 08102.

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

A. I am employed by American Water Works Service Company, Inc ("Service Company" or "AWWSC") as the Assistant Treasurer. The Service Company is a subsidiary of American Water Works Company, Inc. ("American Water") that provides support services to American Water's subsidiaries, including Kentucky-American Water Company ("Kentucky-American," "KAWC" or the "Company").

Q. Have you previously filed testimony before this Commission?

A. No.

Q. Please state your educational and professional background and state whether you are a member of any professional organizations.

A. I hold a Master of Business Administration in Finance from St. Joseph's University and Bachelor of Science in Accounting from Pennsylvania State University, with 25 years of accounting and finance experience in several industries. Since 2006, I have been employed by Service Company in multiple finance roles and most recently as the Assistant Treasurer since September 2024. Prior to Service Company I held multiple accounting and finance roles in several industries including Financial Services and Insurance.

Q. What are your current employment responsibilities?

A. I am responsible for oversight and support of the treasury function and the day-to-day activities of the treasury department, including the planning, analysis and execution of all activity, including debt and equity financings for American Water and its subsidiaries. I

also serve as the Assistant Treasurer for Kentucky-American and am responsible for supporting KAWC's management and finance teams in the execution of KAWC's financing plans and overall capital structure management.

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

A. The purpose of my direct testimony is to present the recommended capital structure to be used for computing Kentucky-American's weighted average cost of capital ("WACC"). The WACC is used as the authorized overall rate of return on rate base in this case. The Company's WACC reflects, among other things, the rate of return on common equity recommendation presented in the Direct Testimony of KAWC witness Ann E. Bulkley.

Q. Did you prepare, or cause to be prepared under your direction and supervision, the schedules that you are sponsoring?

A. Yes, I did.

Q. Please identify the exhibits you will be sponsoring and for which you will be providing testimony.

A. I am sponsoring, in whole or in part, the following exhibits, related to the Company's proposed capital structure and WACC:

- Exhibit 9 Rate base/capital reconciliation
- Exhibit 23 Financial forecast - capital structure requirements
- Exhibit 27 Most recent stock or bond prospectus (Most recent)
- Exhibit 37 Schedule J Cost of capital
- Exhibit 37 Schedule K Comparative financial data and earnings measures

Q. What forecast period has the Company proposed in this case?

A. The Company's forecasted test year is the projected thirteen-month average ending December 31, 2026.

II. CAPITAL STRUCTURE & OVERALL COST OF CAPITAL

Q. What is the purpose of determining the Company's capital structure?

A. As noted previously, the capital structure is used to compute the Company's WACC in this proceeding. The WACC is the overall rate of return that is applied to the Company's rate base to determine the net operating income, which is a component of determining the overall revenue requirement used to calculate the rates and charges proposed in a base rate proceeding.

Q. What was the previously authorized capital structure in the last case?

A. Table 1 below shows the authorized capital structure determined in Case No. 2023-00191, for the components, carrying amounts, weightings, cost rates, weighted costs and overall WACC.

Table 1

Authorized Cost of Capital				
Component	Carrying Amount	Weighting	Cost Rate	WACC
Short-Term Debt	$9,168,090	1.54%	5.35%	0.08%
Long-Term Debt	$273,581,929	45.87%	4.54%	2.08%
Preferred Stock	$2,245,236	0.38%	8.51%	0.03%
Common Equity	$311,462,178	52.22%	9.70%	5.07%
Total Capitalization	**$596,457,433**	**100.00%**		**7.26%**

Q. What capital structure do you sponsor for computing the Company's WACC for ratemaking purposes?

A. I sponsor the projected capital structure for the thirteen-month average of the forecasted test-year ending December 31, 2026. The capital structure proposed by the Company is included in the filing documents on Schedules J-1 thru J-5 of Exhibit 37. Exhibit 37

indicates the thirteen-month average capital structure and WACC on which the Company based its revenue requirement in this case. The proposed capital structure is comprised of 1.31% short-term debt, 46.1% long-term debt (47.41% total debt), 0.33% preferred stock, and 52.26% common equity.[1] The proposed capital structure is nearly identical to the capital structure approved in Case No. 2023-00191.

Q. In what manner does the Company currently obtain its long-term and short-term debt?

A. The Company utilizes the services of American Water Capital Corp. ("AWCC") to meet its long-term ("LT") and short-term ("ST") debt requirements. AWCC is an American Water subsidiary, and an affiliate of KAWC, established for the purpose of providing financial services to American Water, its water utility subsidiaries, and Service Company, including the issuance of debt securities in a consolidated, cost-effective manner. By Order entered July 21, 2000 in Case No. 2000-00189, the Commission authorized the Company to enter into a Financial Services Agreement with AWCC which enables the Company to periodically issue debt securities in the form of notes or debentures for the purpose of replacing ST debt or refinancing maturities of existing long-term debt. In Case No. 2006-00418, the Commission reaffirmed the Company's authorization to use AWCC for the attainment of its debt financing. In its Order in Case No. 2009-00156, the Commission again authorized the Company's use of AWCC as a source for its LT and ST debt funding. The Commission again permitted the Company's authorization and participation in the AWCC borrowing program in Case Nos. 2011-00115, 2012-00393, 2015-00400, 2019-00083, 2021-00019 and most recently, in its Order Case No. 2024-00018.

[1] The Company also has investment tax credits reflected in Exhibit 37, but are not separately discussed because the credits do not impact the percentage of each capital structure component.

Q. What factors require the Company to seek additional capital?

A. The Company's ongoing investments in capital improvements to meet the new and changing regulations in the water industry, replace aged treatment and distribution facilities, and continue to provide quality, reliable water service to its customers have driven, and will continue to drive, the need for new capital. The Company's proposed capital structure in this proceeding reflects four new LT debt financings, the first in the amount of $10 million that was completed on March 15, 2025, the second in the amount of $13 million and is scheduled for third quarter 2025, the third in the amount of $18.5 million and is scheduled for first quarter 2026, and the fourth in the amount of $18.5 million, which is scheduled for third quarter 2026. The Company's requested capital structure also reflects three equity infusions totaling $24 million through the forecasted test year ending December 31, 2026. The first equity infusion in the amount of $7 million, was completed on March 31, 2025. It is important that the Company maintain a strong financial position to allow it to continue to attract capital at a reasonable cost, which will assist the Company in its effort to continue to provide safe, reliable and affordable water service to its customers.

Q. What is the level of short-term debt included in the Company's forecasted test year capital structure?

A. The Company uses ST debt to temporarily finance capital improvements. This type of financing is used to bridge the gap between the placement of permanent financings, such as LT debt and common equity. The capital structure used to set rates in this proceeding should reflect the capital component mix that will be in place to finance the rate base upon which rates will be set, since the capital structure is used to calculate the overall rate of

return that is applied to rate base. The level of ST debt in the Company's proposed capital structure in this case is the thirteen month average balance for the forecasted test-year ending December 31, 2026. That level of ST debt is reflective of the level that will be utilized to fund the investments under construction but not yet placed into service and other cash requirements during the forecasted test-year.

Q. What is the level of long-term debt included in the Company's forecasted test year capital structure?

A. As described above, the Company's proposed capital structure includes $10 million of new LT debt which was completed on March 15, 2025. The Company executed the issuance as all ten-year taxable bonds issued through AWCC. The interest rate on the ten-year issuance is 5.25%. The Company has also forecast an issuance in third quarter 2025 of $13 million, during the pendency of this case. This amount will be all thirty-year taxable bonds with an assumed interest rate of 5.845%. The Company stays abreast of the capital markets and will adjust these plans to efficiently execute on its financing needs based on the current market conditions. Additionally, the Company has also forecasted two issuances in 2026 of $18.5 million each. The first issuance is scheduled for the first quarter and the second issuance is scheduled for the third quarter. These amounts will also be split between ten- and thirty-year taxable bonds with assumed interest rates of 5.6% and 5.79%. Issuance costs are projected to be 1% of the principal for the new bonds. In addition, the long-term debt carrying value was adjusted to reflect the amortization of debt expense that will occur through the end of the forecasted test year.

Q. What is the level of common equity included in the Company's forecasted test year capital structure?

A. Kentucky-American has projected to have $19,603,671 of retained earnings activity for the March 2025 through December 2026 period. As described above, Kentucky-American has planned four LTD financings totaling $60 million, of which $10 million was completed on March 15, 2025, and three equity infusions totaling $24 million, of which $7 million was completed as of this filing and recorded on March 31, 2025, in the forecast period ending December 31, 2026. These financings, together with internally generated financing via retained earnings, result in a December 31, 2026 13-month-average common equity ratio of 52.26%.

Q. What is an appropriate basis for establishing a common equity ratio for the forecasted test-year ending December 31, 2026?

A. An appropriate common equity ratio should consider how the forecasted rate base is financed or projected to be financed, whether or not it is reasonable as compared with its Proxy Group as defined in Company witness Bulkley's direct testimony, and whether it provides sufficient financial strength to allow access to cost-efficient financing. As described above, Kentucky-American has planned four LTD financings totaling $60 million, of which $10 million was completed as of this filing and recorded on March 15, 2025, and three equity infusions totaling $24 million, of which $7 million was completed as of this filing and recorded on March 31, 2025, in the forecast period ending December 31, 2026. These financings, together with internally generated financing via retained earnings, result in a December 31, 2026 13-month-average common equity ratio of 52.26%. This is the equity level that appropriately considers how the Company's

investments will actually be financed. Further, Kentucky-American's December 31, 2026 common equity ratio is reasonable in comparison to the Proxy Group's 3-year average common equity ratio of 52.77% included in Witness Bulkley's direct testimony, and it supports cost-efficient financing. A utility that is well run, generates predictable financial results, and maintains a reasonable capital structure that allows for the efficient attraction of capital benefits its customers. There is a direct link between a utility delivering predictable financial results and maintaining solid credit ratings. Financial results dictated by positive, growing, and predictable earnings, along with other financial measurement results contribute to a company's ability to access capital at a reasonable cost. Conversely, companies with poor financial results or with capital structures that are outside reasonable levels will pay more to access capital. Therefore, the appropriate basis for determining the common equity ratio for the forecasted test-year ending December 31, 2026 is one that is reasonable and takes into consideration the Company's ongoing investments in capital improvements to meet the new and changing regulations in the water industry, replace aged treatment and distribution facilities, and enable it to continue to provide safe and reliable water service to its customers through the forecasted test-year and does not look at historical data only.

Q. Is Kentucky-American's recommended common equity ratio an outlier compared to common equity ratios ordered by the Commission?

A. No. A review of the ordered common equity percentages for Kentucky utilities over the past four years shows that Kentucky-American's current and recommended common equity ratios are reasonable in comparison. Table 2 reflects these publicly disclosed ordered common equity percentages for other Kentucky utilities.

Table 2

Utility	Docket	Filed Equity %	Ordered Equity %	Order Date	Case Resolution
Columbia (Gas)	2024-00092	52.64%	52.64%	12/30/2024	Settlement
Kentucky Power (Electric)	2023-00159	41.62%	41.25%	1/19/2024	Settlement
Duke (Electric)	2022-00372	52.51%	52.15%	10/12/2023	Litigated
Water Service (Water)	2022-00147	49.71%	50.09%	4/12/2023	Litigated
Atmos (Gas)	2021-00214	57.05%	54.50%	5/19/2022	Litigated
Delta (Gas)	2021-00185	51.76%	51.72%	1/3/2022	Settlement
Duke (Gas)	2021-00190	50.70%	51.34%	12/28/2021	Settlement
Columbia (Gas)	2021-00183	52.64%	52.64%	12/28/2021	Settlement
LG&E (Gas)	2020-00350	53.13%	53.19%	6/30/2021	Settlement
LG&E (Electric)	2020-00350	53.13%	53.19%	6/30/2021	Settlement
KU (Electric)	2020-00349	53.14%	53.23%	6/30/2021	Settlement
Kentucky Power (Electric)	2020-00174	43.25%	43.25%	1/13/2021	Litigated
Duke (Electric)	2019-00271	48.23%	48.23%	4/27/2020	Litigated

Q. What weighted average cost of capital is the Company requesting in this case?

A. Table 3 shows the forecasted capital structure for the 13-month average ending December 31, 2026, for the components, carrying amounts, weightings, cost rates, weighted costs and overall WACC. The forecasted December 31, 2026 13-month-average common equity percentage and WACC are 52.26% and 7.86%, respectively. Table 3 reflects a capital structure that is reasonably balanced between equity and debt and places less burden on its customers.

Table 3

Cost of Capital Summary 13-Month Average For Forecast Period Ending December 31, 2026				
Component	Carrying Amount	Weighting	Cost Rate	WACC
Short-Term Debt	$8,914,663	1.31%	4.16%	0.05%
Long-Term Debt	$314,752,544	46.10%	4.70%	2.16%
Preferred Stock	$2,245,974	0.33%	8.50%	0.03%
Common Equity	$356,818,465	52.26%	10.75%	5.62%
Total Capitalization	**$682,731,646**	**100.00%**		**7.86%**

Q. Do customers benefit from the Company's efforts to maintain a reasonable capital structure and cost of capital?

A. Yes. Customers benefit from a utility that is well run, generates predictable financial results and maintains an appropriate capital structure. There is a direct link between a utility delivering predictable financial results and maintaining solid credit ratings. Ratings agencies consider an entity's financial results both as a qualitative and a quantitative measure in establishing a company's credit rating. Positive, growing and predictable earnings per share and other financial measurement results contribute to a company's ability to access capital at a reasonable cost. Companies with poor financial results or with capital structures that are outside reasonable levels will need to pay more to access capital. The Company's customers benefit from our financial performance which helps us maintain strong credit ratings and enabling access to capital markets on good terms. A capital structure that is reasonably balanced between equity and debt and places less burden on its customers.

III. CONCLUSION

Q. Does this conclude your prepared direct testimony?

A. Yes, it does.

VERIFICATION

STATE OF NEW JERSEY)
) **SS:**
COUNTY OF CAMDEN)

The undersigned, Jennifer Gonzales, being duly sworn, deposes and says that she is the Assistant Treasurer for American Water Works Service Company, Inc., that she has personal knowledge of the matters set forth in the accompanying testimony for which she is identified as the responsible witness, and that the answers contained therein are true and correct to the best of her information, knowledge and belief.

Jennifer Gonzales

Jennifer Gonzales

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 7 day of May, 2025.

Meresa M. Yager

Notary Public

My Commission Expires:

10/2/29

MERESA M YAGER
Notary Public, State of New Jersey
My Commission Expires Oct 2, 2029

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-	**)**	
AMERICAN WATER COMPANY FOR AN	**)**	**CASE NO. 2025-00122**
ADJUSTMENT OF RATES	**)**	

DIRECT TESTIMONY OF WILLIAM A. LEWIS

May 16, 2025

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is William A. Lewis. My business address is 2300 Richmond Road, Lexington Kentucky 40502.

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

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

Q. Have you previously filed testimony before this Commission?

A. Yes, I testified before the Kentucky Public Service Commission ("Commission") on behalf of Kentucky-American in the metering practices investigation case (Case No. 2022-00299) and the Company's last rate case (Case No. 2023-00191).

Q. Please state your educational and professional background and state whether you are a member of any professional organizations.

A. I received a Bachelor of Science degree in Education from Miami University, Oxford, Ohio. I began my career in 1996 as a Department of Public Works Utility Worker for the City of Loveland, Ohio. In 2001, I went to work for the Jefferson Regional Water Authority in Miamisburg, Ohio as the Superintendent/General Manager, where I was responsible for managing the water utility and reported directly to the Board of Trustees. In 2006, I was hired by American Water, Military Services Group, as the Utility Manager at Fort Leavenworth, Kansas. I managed all water and wastewater operations and capital programs in support of a federal 50-year Operations & Maintenance contract under the United States Department of Defense ("DoD") Utilities Privatization program. In 2007, I was promoted to Regional Manager and oversaw the operations, capital programs and

administered the contracts for Fort Leavenworth in Kansas; Fort Sill in Oklahoma; Fort Hood in Texas and Scott Air Force Base in Illinois. In 2011, I served as the Regional Manager of Capital Programs for Scott AFB, Fort AP Hill in Virginia, and Fort Meade in Maryland. In 2013, I was promoted to Director of Technical Support, where I oversaw technical operational and capital support of all Military Services operations including new field technology and capital practices, and performed due diligence activities in support of business development programs. In 2014, I was promoted to Director of Growth and Development. In 2018, I transferred from the Military Services Group to New Jersey-American Water Company serving as the Sr. Director of Operations for the North operating region. In that role, I was responsible for utility operations and Distribution System Improvement Charge ("DSIC") delivery for the approximately 95,000 connections in the North operating region. In 2019, I transferred to New Jersey American Water's Central operating region as Sr. Director of Operations. In this role, I was responsible for operations and DSIC delivery for the approximately 220,000 connections in the region. In November 2022, I was promoted to my current role as Vice President of Operations for Kentucky-American. I am a member of the American Water Works Association and am a member of the American Water Works Association ("AWWA") KY/TN Section Water Utility Council. I hold a Kansas Class 3 water treatment License.

Q. What are your responsibilities as Vice President of Operations?

A. I am responsible for all operations of KAWC, which includes treating and furnishing potable water; collecting, treating, and discharging wastewater; and providing customer service. I oversee the safety and continuity of the Company's operations; the Company's water quality efforts; and the upkeep and maintenance of the Company's facilities. I

manage a team of approximately 132 professionals that provide high quality water and wastewater service to KAWC customers.

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

A. The purpose of my direct testimony is to describe KAWC's operations and discuss our commitment to water quality, health and safety, and our continuing efforts to improve water efficiency. My testimony also addresses certain costs, staffing needs and employee compensation.

II. KAWC FACILITIES AND OPERATIONS

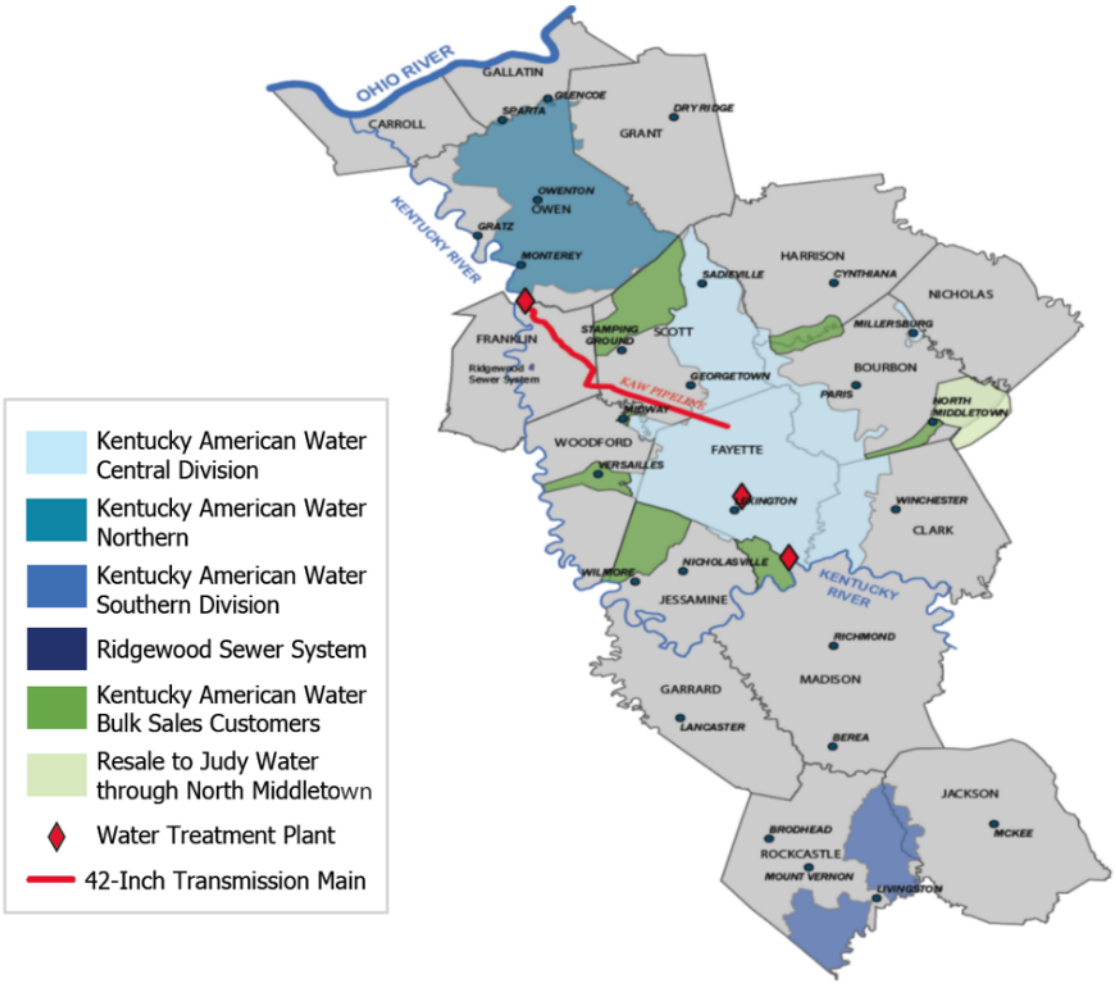
Q. Please describe the Company's operations and the facilities and property that KAWC uses to provide water service to customers.

A. KAWC provides water utility service to over 139,500 water service connections representing more than 550,000 total population served in all or portions of 14 Kentucky counties. The Company's service territory is divided into three operating districts serving the following counties: the Central District is composed of Bourbon, Clark, Fayette, Harrison, Jessamine, Nicholas, Scott and Woodford counties; the Northern District is composed of Owen, Gallatin, Grant and Franklin counties; and the Southern District is composed of Rockcastle and Jackson counties Image 1, below, shows KAWC's service territory. KAWC also transmits water to ten bulk water customers from various points in the distribution system.[1] KAWC's utility plant accounts include land and land rights; structures and improvements; collecting and impounding reservoirs; wells, pumping

[1] The bulk water customers are Jessamine South Elkhorn Water District, the City of Nicholasville, the Georgetown Municipal Water and Sewer Service, the City of Versailles, the City of Midway, the City of North Middletown, East Clark County Water District, the Harrison County Water Association, Nicholas County Water District and Peaks Mill Water District.

equipment and associated facilities; purification plant and equipment; transmission and distribution mains; distribution storage facilities, service lines, manholes, meters, hydrants and other facilities, including materials and supplies.

Image 1: <u>Kentucky-American Water Service Area (Water and Wastewater)</u>



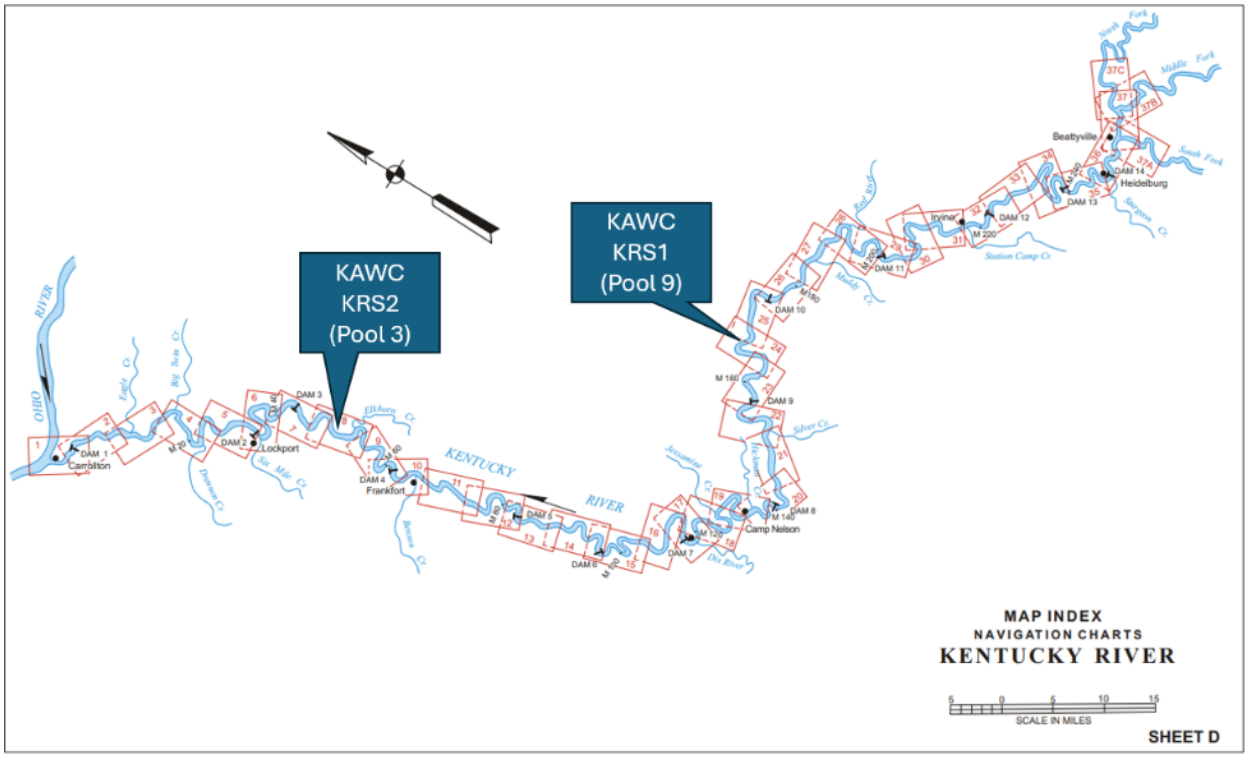
Q. Please describe KAWC's water treatment and distribution system assets.

A. KAWC currently operates three water treatment facilities that provide treated water to retail and bulk water customers. These are the Kentucky River Station I ("KRS I"), the Kentucky River Station II ("KRS II") and the Richmond Road Station ("RRS"). The combined treatment capacity at these facilities is 85 million gallons per day ("MGD") – 40

MGD at KRS I, 25 MGD at RRS, and 20 MGD at KRS II. KAWC withdraws water from Pool 9[2] of the Kentucky River for KRS I and RRS. An intake pumping facility at river level withdraws water and pumps the raw water up a 380-foot bluff. The raw water is then directed to the KRS I treatment plant and may also be directed through a pipeline to the RRS treatment plant or the Jacobson Reservoir. The RRS may utilize raw untreated water supplied directly from the Kentucky River pipeline or withdraw water from the Jacobson Reservoir, located on US 25 south of Lexington. On an emergency basis, RRS has the capability to withdraw water from Lake Ellerslie, located on Richmond Road next to the RRS. KAWC withdraws water from Pool 3 of the Kentucky River for KRS II. River water is pumped up a steep bluff (approximately 300 feet) to the water treatment facility. Below, Image 2 shows the locations of Pool 3 and Pool 9 along the Kentucky River.

[2] The Kentucky River is divided into a series of pools separated by lock and dam structures that were constructed by the United States Army Corps of Engineers. The number of the pool indicates the location of that portion of the river (e.g. Pool 9 is the section of river located upstream of Lock and Dam #9).

Image 2: Locations of Pool 3 and Pool 9 along the Kentucky River



KAWC's treatment facilities utilize a chemical-mechanical process. Both RRS and KRS II utilize a conventional coagulation and sedimentation process, followed by filtration through sand filters. RRS also employs granular activated carbon as an additional filter media. KRS I has an up-flow solid contact process followed by filtration through mixed media high rate filters. Both the RRS and KRS2 facilities utilize ultraviolet disinfection post filtration. The KRS I, KRS II and RRS facilities use chloramination to maintain residual disinfectant within the distribution system. Each facility is fully staffed by water treatment plant operators certified by the Kentucky Division of Water ("KYDOW"), a division of the Kentucky Energy and Environment Cabinet ("KYEEC"). KAWC's treatment facilities meet or surpass all federal and state water quality regulations.

Pumps transport the water from the treatment facility to the distribution system for delivery to the customer's home or business. The pumping stations move water 24 hours a

day using appropriately sized pumps, pipes and power sources to drive the pumps. This sophisticated equipment requires regular maintenance and upgrades.

Water in our distribution systems travels through over 2,407 miles of Company-owned water mains and approximately 90 miles of private mains[3] through a network of pipes that deliver water across cities, towns, subdivisions and neighborhoods to homes, businesses, industrial plants and a multitude of other destinations. To ensure that adequate water quantity and pressure is conveyed where it needs to go, engineers run computer simulations of the hydraulic activity of the water to determine proper pressure, pipe sizing, and other factors (a fire hydrant, for example, will require different flow and pressure characteristics and larger piping than will water for residential use). Before it gets to where it is needed, water may be stored in our 28 storage tanks with a combined capacity of approximately 27.2 million gallons. The Company also maintains approximately 34,275 valves and 9,971 fire hydrants throughout its distribution system. To reach the far ends of our system or our higher elevations, water may travel through one of our booster pump stations. Collectively across the communities that we serve in Kentucky, we deliver an average of 43 million gallons of water every day.

Q. What is the condition of KAWC's utility property?

A. KAWC maintains its water utility property in good operating condition for the rendering of water service. The inspections conducted by the KYDOW confirm the Company's operations are in compliance with state and federal drinking water laws and regulations. Company witness John Magner's Direct Testimony contains information regarding the

[3] Private mains are mains that are owned and maintained by a private entity such as a farm, apartment complex, or commercial property.

Company's capital investment activities that are also critical to the continued provision of safe and adequate water utility service.

III. WATER QUALITY AND SAFETY

A. Commitment to Water Quality

Q. Please discuss KAWC's commitment to water quality.

A. KAWC has provided water service to customers for 140 years. We are acutely aware that water is the only utility intended for customers to ingest and that customers rely on KAWC to provide them with safe and reliable water service. Water quality is important to the health and well-being of customers. The Company's water quality program is designed to enable the Company to comply with all drinking water quality, water pollution, residuals management, air pollution and hazardous materials laws and regulations, and KAWC has not received any Notice of Violations since 2015. Beyond health and safety, we know that KAWC's customers are also interested in the aesthetic qualities of the water that 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 and strive to create operational efficiencies that also benefit customers.

Q. What are some of the efforts the Company undertakes to monitor and protect source water?

A. The Company monitors source water entering our treatment plants and measures parameters such as turbidity, pH, alkalinity, hardness, dissolved oxygen, and conductivity to establish daily treatment strategies. In addition to sampling performed manually at our water sources, all three of our water treatment plants utilize online automated water quality analyzers that are regularly monitoring water quality at our intakes and feeds that

information to our SCADA system. This process allows for a constant source of raw water quality data that is monitored, and electronic alerts are triggered when certain water quality parameters fall outside of established parameters. The main purpose is to detect changes in source water chemistry that would indicate a potential contamination of the source water entering our plant intake. Early detection enables operators to take timely protective actions, including additional treatment.

KAWC also uses WaterSuite, a map-based tool that collects information about potential sources of contamination from various sources and pulls it into a database for a defined area of concern. The database is updated on a regular basis to include the latest available information and has search and reporting capabilities. In the event of a confirmed spill or contaminant release within the watershed, the Company participates with organizations, such as the Ohio River Valley Water Sanitation Commission ("ORSANCO"), to communicate spills and contamination events throughout the water utility community so that emergency response planning can be coordinated.

Lastly, the Company promotes source water protection through community education campaigns, funding of environmental grants that have positive impact to watershed protection, and participation on professional boards and committees that influence watershed policies.

Q. Please describe the Company's water quality testing program.

A. KAWC routinely tests water in its systems to determine if it is meeting the safety standards established by the federal and state regulatory authorities. Our drinking water is tested both before and after treatment to confirm that it satisfies 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, volatile organic chemicals, radionuclides, bacteria, disinfection byproducts, and all other contaminants that we are required to monitor at the frequency prescribed by the federal and state regulations, and we report the results of this testing to the KYDOW, in accordance with the regulations. In addition, the Company works with our customers to collect and analyze samples for compliance with the Lead and Copper Rule Revisions, discussed further below, and has begun sampling for perfluoroalkyl and polyfluoroalkyl substances.

As discussed more fully below, water quality regulations have become more stringent over the past several years requiring additional tracking, monitoring, and reporting. In 2024, KAWC collected and analyzed more than 1,000,000 water chemistry, physical water properties, and routine bacteriological samples. These samples include those taken to assess process effectiveness and to monitor emerging contaminant threats. We also collect other bacteriological samples as needed in response to main breaks and similar emergencies.

Q. What regulations govern the quality and quantity of water service provided by KAWC?

A. Water supply utilities are subject to a complex array of regulations at the federal, state, and local levels with respect to water quantity, water quality and other environmental aspects of their facilities and operations. Drinking water quality is addressed by a combination of federal regulations under the Safe Drinking Water Act of 1973, the federal law that established the United States Environmental Protection Agency ("EPA") as the federal regulatory body governing drinking water. Pursuant to that authority, the EPA has

established standards for contaminant levels in drinking water, mandatory treatment methods, monitoring and reporting requirements, and public notification mandates in the event of contaminant level or treatment method noncompliance. The EPA has granted primacy to KYEEC and KYDOW to administer the federal regulatory standards for water systems in Kentucky.

Q. What are some of the new and emerging environmental standards for drinking water quality that will require enhancements or improvements in water treatment facilities and distribution systems?

A. In 2021, EPA adopted the Lead and Copper Rule Revisions ("LCRR") which require public water systems to perform additional actions to better protect communities from potential lead in drinking water. The new requirements include establishing and submitting to the EPA by October 2024 an initial inventory of distribution system service line materials, as known by the Company at that time, and providing annual updates thereafter for both the utility and customer side of the service line. As part of this revised rule, KAWC is required to inventory the service line of every customer served. To compile such records, the Company must not only examine historical records, but survey service connections through various processes, including pot-holing and educating customers on identifying lead. Water systems must continually update inventory records as more data becomes available, and publish and maintain an online inventory of service lines with specific identifiers noting galvanized and lead service lines when and where present. Additionally, the revised rule includes updated customer communication relating to lead; school and daycare testing; sample site validations; increased sampling and management of sample results; establishment of a trigger level; as well as stronger treatment requirements and

requirements for lead service line replacement. The LCRR also requires all water systems with one or more lead, galvanized service line requiring replacement, or lead status unknown service lines in their distribution system, to submit a lead service line replacement plan to the State.

In addition to the LCRR rule, the EPA adopted the Lead and Copper Rule Improvement ("LCRI") in October 2024. This rule builds on the LCRR by requiring 100% lead pipe replacements by 2034 for the vast majority of water systems. The action level threshold for lead in drinking water was also modified to 10 parts per billion ("ppb") from the previous 15 ppb for all samples collected in a system.

The Long Term 2 Enhanced Surface Water Treatment Rule ("LT2"), promulgated in 2006, required many years of source water sampling to determine adequacy of existing treatment for Cryptosporidium. Based upon final source water characterization, surface water systems where classed into "BINs" ranging from 1-4 where BIN 1 requires no additional treatment and BIN 4 requires up to 2.5-LOG of additional removal treatment. KAWC's treatment plants have received a BIN-2 classification that requires 1-LOG of additional Cryptosporidium treatment. The required additional treatment was provided by installing ultraviolet light (UV) disinfection treatment at the RRS and KRS2 surface water treatment plants. As discussed by Company witness Magner, UV disinfection is scheduled to be installed at the KRS1 surface water treatment plant in 2026. The 1996 Safe Drinking Water Act ("SDWA") amendments require that once every five years the EPA issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems. The fifth Unregulated Contaminant Monitoring Rule ("UCMR 5") was published in the Federal Register on December 27, 2021. UCMR 5 requires testing of 30 identified

contaminants for specified periods of time within the 2023 to 2025 timeframe. We anticipate that the UCMR 6 list of contaminants will be published by late 2025 and will have new water quality sampling requirements starting in 2026.

In 2021, the EPA issued two actions to address per- and polyfluoroalkyl substances ("PFAS") in drinking water.[4] More recently, the EPA has finalized the National Primary Drinking Water Regulation for six PFAS substances on April 10, 2024, setting the maximum contaminant level ("MCL") and monitoring requirements for these compounds. Various water systems across the country will be required to install additional treatment to reduce PFAS levels to meet these new regulations. Monitoring for PFAS compounds must begin by 2027; however, KAWC has already begun sampling for PFAS. Testing for PFAS, to date, has not identified the need for treatment at any KAWC water treatment plants to meet the EPA's MCLs. However, testing will continue under UCMR 5 and Company-initiated testing. If there becomes a need to remove PFAS from drinking water, additional treatment technologies would likely be required at existing KAWC water treatment facilities. A determination of what technologies to employ if PFAS compounds meet the EPA's MCLs will require a review of the effectiveness of each technology and an analysis of the costs and operational feasibility for each location.

When changes in regulations make it necessary to modify treatment processes, water quality staff works with staff from engineering and operations to identify, design, and implement the modifications so that the water leaving the plants and traveling through the distribution system continues to meet service and regulatory requirements. We are also

[4] Contaminants of Emerging Concern Under the Clean Water Act, November 29, 2021 and Federal Role in Responding to Potential Risks of Per- and Polyfluoroalkyl Substances (PFAS), August 10, 2022 available at https://crsreports.congress.gov/product/pdf/R/R45998 and https://crsreports.congress.gov/product/pdf/R/R45986.

committed to playing an active role and contributing to policies and regulations that affect sources of drinking water. We review and provide feedback on applicable permits and proposed regulations supporting state and local measures that balance watershed management with economic growth.

Q. Please discuss KAWC's participation with the Partnership for Safe Water.

A. The Partnership for Safe Water ("Partnership") is an alliance of six organizations[5] with a mission to improve the quality of water delivered to customers by optimizing water system operations. All three of KAWC's water treatment plants have been recognized for optimization and water quality achievements: Kentucky River II 6 Year Directors Award; Kentucky River Station 26 Year Directors Award; and the Richmond Road Station 26 Year Directors Award.

Q. Is there any other external validation of the success of KAWC's water quality programs?

A. Yes. The KRS II water treatment plant has been recognized each of the last 5 years (2020-2024) by the KYEEC for optimized drinking water treatment plant performance for turbidity. In meeting these goals, we helped provide customers with protection against waterborne disease extending above and beyond regulatory requirements. This achievement signifies a commitment to the standards of excellence that are at the heart of the EPA Area-Wide Optimization Program. In 2020, KAWC was recognized by the Centers for Disease Control with the Water Fluoridation Quality award. In 2022,

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

Kentucky-American was recognized with the KY/TN Section AWWA award of excellence for Large Distribution System of the year. Additionally, all three water treatment plants (KRS, RRS and KRS II) have received AWWA Partnership Treatment awards each year since 2020.

B. Commitment to Safety

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

A. The health and safety of our employees and customers is of utmost important to our Company. Our coworkers', contractors', and customers' safety is vital, and we focus on it every day. We strive to ensure that the communities we serve are kept safe and that every KAWC employee chooses safety in every job performed. 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. KAWC 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 the Company's recognition that rapid response and recovery from security breaches and all other types of incidents are critical to maintaining the water and wastewater systems.

Q. How is safety an important part of KAWC's operational performance?

A. The Company considers the health and safety of our employees to be a core value as well as a strategy. We are committed to this value through a proactive and robust health and safety program. Our overall goal is to have no employee injured at or away from work as

well as to maintain safety and security for our customers and contractors. A safe workplace increases employee morale, increases our commitment to one another, and in the long run makes for a more engaged and productive workforce.

Q. Please describe KAWC's safety program and Operations' role in promoting safety and a safe working environment at KAWC.

A. KAWC has implemented a variety of safety initiatives to empower employees to act, provide relevant training and equipment, enhance employee engagement and communication, and address safety issues as they arise.

- Employee empowerment: Operational safety begins with employee empowerment. If an employee sees an unsafe behavior or condition, the employee has a responsibility to stop work until the safety issue can be resolved. This is called "Stop Work Authority" and KAWC managers reinforce this policy through communication to employees during meetings. The use of stop work authority is now tracked across the Company and is considered a leading indicator of a successful safety program. KAWC also empowers employees by encouraging the reporting of safety "Hazard ID's," and likewise emphasizes this reporting as a performance metric.[6] During 2024, there were 361 near misses reported by KAWC employees. With this change, the focus on identifying and reporting hazards will shift to the identification of work-related concerns, made proactively before work begins. Through the Hazard Identification (Hazard ID) Program employees will be empowered to identify hazards early, mitigate

[6] The Company launched its near miss reporting program in 2015. Near Miss reporting involves employees identifying a situation that almost, or could have, resulted in an injury or accident. For example, if a piece of equipment becomes worn outside of a regular maintenance cycle, an employee reports this as a near miss so KAWC can replace the worn part and avoid a potential injury from an equipment malfunction.

concerns, and eliminate hazards as they occur in the field. Reporting Hazards while at work empowers KAWC employees to use their knowledge of known hazards to remain vigilant of potential safety issues and continue to improve safety. The overall goal of the Hazard ID program is to have employees engaged in their work, identifying hazards, and empowering them to correct these hazards immediately, if possible. It reduces the potential for injury not only to our employees but our customers and the public as well.

- *Training* - All employees are provided safety training every year. Curriculum typically includes topics such as emergency action plans, slips, trips & fall prevention, trenching and shoring, excavation, first-aid/cpr, chlorine safety, electrical hazards, and traffic management/flagging. Each employee is assigned a specific annual safety training curriculum to match their current job classification. In 2024, the Company provided over *7,077* hours of safety-related training for its employees.
- *Job Site Safety Evaluation Program* - KAWC organizes and promotes job site safety evaluations, where supervisors are encouraged to go out to the job sites to evaluate the workers while are performing their jobs to encourage safe behaviors. In 2024, our supervisors completed 647 Job Site Safety Evaluations.
- *Personal protective equipment* - KAWC provides every employee with the tools and equipment to do their jobs safely. All employees are issued personal protective equipment ("PPE") appropriate to their specific job role to minimize exposure to hazards that cause serious workplace injuries and illnesses. The Company has further reviewed and expanded its use of PPE providing new signage and clear guidance on the PPE needed for different tasks.

- *Site safety inspections* – Safety staff and front-line supervisors regularly visit operational facilities to perform safety inspections. In addition to these routine safety inspections, each of our water and wastewater facilities undergo a quarterly health, safety and environmental walk through with a focus on safety and environmental compliance.
- *Contractor safety* - Contractor safety guidelines are included in KAWC contracts. KAWC contractors must submit safety performance information to demonstrate their commitment to a safe work environment, and contractors with poor safety performance or that don't have a safe work program are disqualified from doing business with KAWC.
- *KAWC Safety Committees* - Every operating area has a council comprised of managers and front-line employees who meet regularly to review accidents, evaluate how to avoid them, and agree on procedural changes to help prevent them in the future.
- *Emergency preparedness and response* – KAWC's emergency response plans consist of an overarching manual paired with facility-specific plans that include local personnel and contacts, emergency action plans, roles and responsibilities, communication protocols, emergency contacts, mutual aid agreements, water and power contingencies, and accessible equipment and services. KAWC recently conducted our 2nd Risk & Resiliency workshops in accordance with the ANSI/AWWA J-100 Standard and working to incorporate the findings into our Emergency Response Plans. KAWC conducts annual exercises and leadership staff are trained in the National Incident Management System for responding to incidents.

- *Internal chemical management* - KAWC raises employee awareness around potential safety and environmental impacts of onsite chemical handling. In 2024, we completed audits for Treatment Chemical Handling at all locations. KAWC manages a robust aboveground storage tank program including regular inspections and state and federal spill prevention plans to help reduce the risk of spills in our operations and increase employee safety.

The Company has also reviewed its water treatment process at each of its facilities. As mentioned previously, we currently use chloramination, which is a very effective disinfectant process for the safe treatment of our water. The original process used chlorine gas and anhydrous ammonia. An atmospheric release of chlorine and ammonia gases could pose a risk to our employees and the surrounding communities. The chlorine and anhydrous ammonia gas systems have been replaced with sodium hypochlorite and liquid aqueous ammonia at both the Richmond Road Station and Kentucky River Station 1 WTPs. Our capital plan also includes the removal of chlorine gas and replacement with sodium hypochlorite at the KRS2 water treatment plant by the end of 2027. These changes have reduced the risk to our employees and the surrounding communities in the event of a chemical release.

We also continue to look at other portions of our operations for safety improvements. For example, as we evaluate future upgrades and replacements of booster stations and underground vault structures, we are choosing designs that eliminate employee risks due to confined space. In addition, we are evaluating our existing vaults for safety improvements to mitigate safety hazards including fall protection, electrical hazards, ventilation, and structural deficiencies. In 2017, we instituted a limitation of 16 consecutive

hours for our work crews. This new work rule was based on a US Department of Transportation study that demonstrated the unfavorable safety impact of extended long-hour shifts. Our new policy mandates that relief crews be made available within 16 hours (or sooner if requested) for any individual or work crew. The policy also requires 8 hours of rest before returning to work. We believe this policy positively impacts our employees' safety and demonstrates our commitment to safety. The current collective bargaining agreement, ratified in 2022, has been amended to include this requirement.

Lastly, the Company implemented a vehicle telematics monitoring program in 2024 that includes vehicle mounted monitoring equipment. Company driver performance is monitored and reported to measure driver behaviors such as use of seatbelts, speeding and aggressive driving. This program has already demonstrated an increase in good driving habits among our employees and has reduced vehicle related incidents.

Q. How does KAWC measure its safety performance?

A. The Company uses a mix of leading and lagging indicators to measure its safety performance. The Hazard Identification program is an important leading indicator, while other performance safety metrics are considered lagging indicators. The OSHA Recordable Incident Rate ("ORIR") is a key metric we use to gauge the effectiveness of our safety program. It considers the number of recordable injuries occurring during a specified time frame (e.g., month, quarter, year) and the total number of hours worked by all employees during that same period.[7] American Water establishes a safety target annually to drive continuous improvement (i.e., reduced injury rates). The target is based on a variety of

[7] The exact methodology for these rates comes from the Department of Labor https://www.bls.gov/iif/osheval.htm.

factors, including historical performance and rate of improvement and safety performance data for both utility and non-utility industries (as reported by the Department of Labor). The Company tracks employees' Days Away Restricted or Transferred ("DART") safety metric. DART incorporates a measurement of the severity of an injury by looking at the impact of the injury on the employee. Beginning in 2025, the Company enhanced its focus to the prevention of severe injuries by implementing a Serious Injury Incidence Rate (SIIR) to measure the effectiveness of the safety program to mitigate the occurrence of serious injuries. This metric focuses on elimination of Serious Injury and Fatalities (SIF) and potential SIFs (SIF-P). The Company's goal is to eliminate injuries and hazardous conditions, however, when injuries do occur, the Company uses the ORIR, DART and SIRR trending to track both the number and severity of injuries.

Q. How do you know that commitment is working?

A. We are building a strong safety culture at KAWC, and our year-over-year safety performance indicates that KAWC's commitment to safety has been effective. In 2015, the Company had fifteen recordable injuries, fourteen of which resulted in days away or restricted time. In 2024, we had a total of two recordable injuries, one of which resulted in days away or restricted time. In ten years, the Company has reduced our total recordable injuries by 87% and reduced our severe injuries by 93%. The Company has demonstrated success and progress in its safety performance and is committed to further improving its safety performance.

Q. Why should the Commission be interested in the Company's emphasis on (and investment in) employee safety?

A. The Commission should be interested for several reasons. First, a safety-first commitment is the right thing to do, and it speaks to the core values and commitments of KAWC. We care about the well-being of our employees. Second, the Company's know-how in this area is an example of the value of the Company's relationship with the Service Company. The Company is able to benefit from best practices and enterprise-wide initiatives (like identifying & correcting hazards and the Certified Safe Worker program) and has access to Service Company expertise. Finally, it is worth noting that the Company has expanded its safety investments and broadened its employee training while still managing its O&M expenses. In other words, the time and energy we devote to safety has not come at the cost of efficiency or the value we provide to our customers – in my view, our safety commitments have only enhanced that value.

Q. How is the Company addressing the physical security of its assets as well as cybersecurity?

A. Kentucky-American Water has taken a comprehensive approach to address physical and cybersecurity. Physical security consists of cameras and badge readers that monitor situations and are programmed to limit access to secure areas, including offices, shops, treatment, pump and lift stations. The Company has strategically placed cameras at critical infrastructure (e.g., tank and treatment 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 located in Camden, NJ. In addition, identification badges are issued for the purpose

of facility access control at Kentucky-American facilities. All employees must wear and openly display the identification badge visibly while on any Kentucky-American Water property, while on Company business or while representing the Company publicly or privately. Unauthorized entries are registered as an alarm that is received by the local operations control room.

The Company takes cybersecurity just as seriously as physical security. 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, industry-leading cyber controls are designed, built and integrated into all aspects of the technology. These investments, including enhancements to controls of identity and management of access to our systems, monitoring of sensitive information, and increased visibility of potential intrusion attempts to our systems, protect our existing systems and enable the implementation of secure innovation. Safeguarding the integrity of Company information and systems, as well as customer data, while enhancing the customer experience is our security 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. Kentucky-American Water further demonstrates its commitment to cybersecurity by actively participating in tabletop and active exercises on how to react in the event of a cybersecurity incident that impairs our automation capabilities.

IV. IMPROVING WATER EFFICIENCY

Q. What is water efficiency?

A. In simple terms, water efficiency means using improved practices and technologies to deliver water service more efficiently. KAWC's efforts to improve water efficiency cover a wide range, and include supply-side practices, such as water loss reduction efforts, improved pump efficiencies, electrical cost management programs, chemical and waste disposal improvement projects, as well as demand-side strategies, such as customer and public education programs that provide incentives to improve water and energy efficiency. From an operations perspective, improving water efficiency requires achieving a cost-effective mix of prudent investments and improved operations and maintenance management capabilities targeting safety, customer satisfaction, sustainability, and system efficiency.

Q. Please discuss KAWC's efforts to improve water efficiency.

A. The Company's ongoing investment in technology enables a better end-to-end view of its water business. Improved water usage monitoring and leak detection, water quality monitoring, and consumer communications technology are just some of the benefits that result from the deployment of intelligent infrastructure, advanced communications, sensor networks and other technologies.

For instance, improved metering results in more accurate usage information and may increase water efficiency. Leak detection programs can reduce the amount of water, pressure and energy required to deliver the same amount of water to customers' taps. KAWC has a comprehensive program to manage water loss and proactively promotes wise water use to customers, which can reduce customer demand. Annually, our teams take part in a variety of community events, environmental grant programs, and firefighter grant

programs. These events provide our employees with an opportunity to meet with our customers and talk about water conservation, leak detection in our customers' homes, and other ways that customers can improve their water efficiency. KAWC has implemented a multi-faceted effort to educate and encourage residential customers on how they can lower their water bills by putting some simple practices in place around the home and fixing water leaks in a timely manner.

Striving for increased water efficiency is evident in our infrastructure investments, which include main and service replacements to provide a better, more reliable system. Prudent investment in technology enables us to leverage the size and scale of American Water to reduce manual tasks and increase automation. Additionally, our water efficiency efforts are demonstrated by investments in innovative data collection technologies, and by improved business processes that help us work smarter and more efficiently and, by extension, contribute to our cost control efforts.

Q. How is the concept of improving water efficiency relevant to this case?

A. Improving water efficiency not only reduces operations expense, but also is a more environmentally friendly way of conducting business. When water is used efficiently, it reduces capital and operating costs related to the provision of water service, while also helping to protect and preserve our natural resources. Improving water efficiency saves customers money in the long run, helps protect the environment, supports integrated resource planning, and enhances the economy.

Q. How is KAWC using technology to improve water efficiency?

A. KAWC is using technology to further enhance its preventative maintenance programs. Accurate electronic maps ensure that the institutional knowledge currently held by some

of our employees is captured for use by current and future employees. To that end, we have loaded our facilities into a geographic information system ("GIS") so that maps of KAWC's water systems are accessible online. GIS includes the location and a short description of the facilities, giving us an electronic spatial view of our entire system. GIS also helps us to locate customers that might be impacted by related service issues and allows us to communicate the impact more effectively with our customers. Our crews are now equipped with GPS equipment and are acquiring GPS coordinates for all repairs, replacements, new valve and hydrant installations, and new service lines as the work is completed. This process ensures the accuracy of the GPS coordinates and quick updates to our overall GIS mapping as opposed to sending crews to perform this work at a later date, requiring multiple trips.

Work1View, our Customer Work Order System, is used by our field service representatives ("FSR") to manage customer facing service orders. The system is used to schedule appointments and provides the FSR with all the customer, premises, and meter information needed to work service orders efficiently in the field. The system is also used by our local management team and customer service representatives to dispatch FSRs to scheduled and emergency customer requests. These types of improvements will continue to drive a better customer experience and level of satisfaction.

Q. **Are there other technology solutions that have been implemented to improve employee effectiveness?**

A. Yes. In addition to GIS and Work1View, the Company has implemented other technology solutions to enhance employee effectiveness. As discussed above, the Company's applications allow for more efficient data capture and regulatory reporting. MyWater and

Customer1View ("C1V") are additional software applications that provide more comprehensive and easily accessible information to employees and customers.

Q. Please describe how MyWater and C1V improve employee effectiveness.

A. C1V provides improved access to customer information (e.g., premise and service order history, meter details, billing and payment information) to field service representatives ("FSRs") who regularly interact with our customers. This means that FSRs can view the same information as customer care agents ("CCAs") who regularly interact with our customers. This allows our FSRs to review customer information that can help them address the customer's issue and provide customers information while speaking with them, rather than having to contact the customer service organization ("CSO") for information or requiring customers themselves to follow up with the CSO. FSRs can also update customer information and record notes on customer interactions on the spot, providing other employees that serve our customers with timely access to the most up-to-date information. MyWater is a customer facing website that allows customers to view much of the same information in the same format used by both the FSRs and CCAs which makes for a more seamless discussion when interacting with the customer. MyWater provides customers self-service options to pay their bill, check their account balance, request to turn their service on or off, sign up for alerts, view their water usage, and setup paperless billing. Recent and planned enhancements have and will also improve the Company's customers' self-service capabilities and the resiliency and usability of the website. Taken together, these types of improvements continue to support improved customer experience and satisfaction.

Q. Are there other technology solutions KAWC has implemented to improve water efficiency?

A. Yes, the Company continues to upgrade and enhance its Supervisory Control and Data Acquisition ("SCADA") systems that monitor and control water production equipment. SCADA systems are essential in the efficient delivery of these vital services. These upgrades to several SCADA systems across the state enable KAWC to collect, manage and present real time SCADA information from multiple remote water systems enabling the Company to identify opportunities to monitor and control systems remotely, better protect operational assets, and increase the accuracy of KAWC's hydraulic models.

Q. How can prudent capital expenditures improve water efficiency?

A. The Qualified Infrastructure Program ("QIP") enables us to develop and maintain a more systematic replacement program of our distribution mains throughout our service territory. The systematic replacement that QIP supports is more cost effective for customers in the long run because replacing our aging infrastructure will reduce likelihood of breaks and emergency situations that are not only costly to repair but also disrupt customer service.

A. Water Loss Control Program

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

A. Reducing water loss is a complex issue with many contributing factors. As part of its water loss prevention program, the Company has been compiling and analyzing data, as well as taking steps to identify, measure, prioritize, and mitigate both real and apparent water loss. The Company's efforts to reduce water loss include pressure management, accelerated infrastructure replacement, active leak detection, rapid response to breaks, fire service and water loss audits, and large meter testing and profiling. Water loss can be classified into

two categories: (1) real loss, which is water that escapes the distribution system from leaks or storage overflows; and (2) apparent loss due to meter inaccuracies, billing system data errors, and unauthorized consumption.

Q. Please describe some of the Company's efforts to mitigate real water loss?

A. The Company's water loss control interventions identify, measure, and mitigate real water loss by focusing on reducing leakage from transmission and distribution mains and leakage from customer service connections up to the point of customer metering.

- *Leak Detection.* KAWC is addressing real losses by enhancing its leak detection efforts throughout its distribution system. Kentucky-American is planning to deploy active acoustic monitoring devices on fire hydrants throughout our Central distribution system. These devices replace the existing hydrant steamer nozzle cap, do not interfere with the normal operation of the fire hydrant, and use a cell-based communication to collect acoustical data that is then uploaded for acoustical analysis. After digital analysis of the acoustical data, points of interest in the distribution are assigned to our leak detection crews for acoustical correlation and leak sounding to pinpoint below grade leaks. This will help to reduce water loss from leaks that are not visually apparent, capture smaller leaks that may not be located through traditional methods, and identify leaks before they become larger thereby mitigating damage to below grade road infrastructure and adjacent properties.
- *Pressure Management.* Effective pressure management can help extend asset life, improve customer service, and reduce water losses and the risks of asset failure. KAWC has undertaken replacement projects to improve the operational efficiency of pumping at our water treatment facilities. This includes replacement of KRS I High Service

Pump No. 13 with a high efficiency vertical turbine pump that is sized to better match flows with system demand, the replacement of High Service Pump No. 6 at the Richmond Road WTP with a high efficiency split face pump with a 90% efficient motor paired with a variable frequency drive ("VFD"), and planned replacement of KRS I Low Service Pump with an efficient vertical turbine pump.

- *QIP*. The replacement of aging infrastructure helps address real losses by replacing mains that are leaking or otherwise impaired. KAWC uses its integrated GIS mapping information as part of its comprehensive review of water main breaks to identify and better prioritize areas with an abnormally high main break frequency over a defined period. Main breaks are not only costly to repair, but may also impair water quality, disrupt service to customers and/or result in damage to KAWC property, customer property, and city streets. Being able to identify potential problem areas before main breaks occur and leveraging the QIP to proactively replace mains could avoid failures, reducing the cost of repairs, restoration, and damage to other facilities or property.

Q. Please describe some of the Company's water loss control interventions employed to identify and mitigate apparent losses.

A. There are several ways the Company is working to mitigate apparent losses. The Company conducts fire service audits, evaluates large meter accuracy, calibrates plant meters that quantify the water sent into our distribution system, and is improving its billing practices:

- *Fire Service Audits*. KAWC has reviewed and improved its processes related to fire services. The Company requires a detector meter on all new fire service installations to help identify unauthorized usage. We monitor our fire services through their attached detector meters. This meter is read monthly and allows us to bill for any small usage

on the fire service for the month. If there is consistent month-to-month usage on a detection meter we investigate to determine whether it was for authorized use. Not only do the audits address apparent water loss, but they also allow us to check for vault safety and any items that may need to be updated for the safety of our employees, as well as include cross connection checks to help ensure the quality of our water to our customers. The cause of the continuous usage ranges from leaks downstream of the detector device and unauthorized use of private fire hydrants, to illicit connections on fire lines.

- *Large Meter Testing and Profiling.* Large meter testing and profiling includes our effluent meters in the plants as well as our large customer meters. KAWC annually tests plant effluent meters in order to ensure accuracy of the system delivery numbers used to calculate non-revenue water ("NRW") for water leaving the Company's three treatment plants. The Company also analyzes consumption patterns to determine if the customers' meters are still appropriate for their current consumption rates, and if not, the installation of new meters are recommended. In addition, the Company evaluates customers' needs for large meters when the Company is aware that a premise has been repurposed. A customer or premise could have had a need for a large meter in the past but as businesses or buildings are repurposed their routine usage can diminish the need for a large meter. An oversized meter is more susceptible to missing low flows so having appropriately sized meters is important. When the Company determines, in consultation with the customer, that the meter is oversized, it replaces the meter with the appropriately sized meter for the customer's usage.

- *Billing Process*: The Company monitors its customer information system and billing system for inactive accounts with consumption, active accounts with no consumption, premise mismatches, estimated reads and consecutive zero consumptions that may impact apparent water loss levels. These exceptions generate work orders that determine and eliminate the issues that caused the exception.

Q. What are KAWC's historical NRW and unaccounted for water ("UFW") percentages?

A. Non-revenue water (NRW) refers to the water produced by a utility that doesn't reach its intended customer due to factors like leaks, meter inaccuracies, unauthorized consumption, water used in the water treatment process, or maintenance of the water distribution system resulting in lost revenue for the utility. NRW is the difference between all water produced and all water sold. Unaccounted for water (UFW) on the other hand, refers to the water produced by a utility that doesn't reach its intended customer less accounted for water such as distribution system flushing, fire department water use, and water used in the water treatment process. UFW is equal to NRW less accounted for water. Please see the chart below for KAWC's historical NRW and UFW percentages..

Historical NRW and UFW		
Year	**NRW**	**UFW**
2016	16.80%	15.69%
2017	19.80%	18.86%
2018	21.15%	19.95%
2019	22.79%	21.10%
2020	21.62%	20.47%
2021	22.08%	21.085

2022	22.67%	21.59%
2023	19.68%	18.83%
2024	19.38%	17.96%

V. OPERATING AND MAINTENANCE EXPENSE

Q. What level of operating and maintenance ("O&M") expense is the Company seeking in this case?

A. KAWC is seeking recovery of approximately $51 million in O&M expense for the forecasted test period, which represents the forecasted expense levels for the twelve months ending December 31, 2026. While this represents an increase in expense, it is important to note that the Company has managed to keep the level of O&M expense, net of production costs, since 2014, below the corresponding rate of inflation over the same period. The requested increases in O&M expense supports the Company's efforts to continue providing high quality water service in the most cost-effective way to our customers in the long-term. KAWC's O&M pro forma adjustments proposed in this case are discussed in greater detail in the direct testimonies of KAWC witnesses Robert Prendergast, Michi Chao and Dominic DeGrazia.

Q. Please explain some of the drivers of the Company's O&M expense increases since its last rate case.

A. The Company is projecting an increase in O&M expense in order to continue providing cost-effective, high-quality water and wastewater service to our customers over the long term. Maintaining KAWC's facilities in accordance with safety, environmental and water quality standards requires substantial capital investment and annual operations and maintenance expenditures by the Company. The Company's proposed rates in this case are

intended to recover the prudently incurred and just and reasonable level of KAWC's costs in meeting these requirements. KAWC's requested increase in O&M expense is driven by increases associated with labor costs, including additional employees primarily associated with meeting new regulatory requirements, and, as further discussed below, support services costs. The Company's proposed rates in this case are intended to recover the prudently incurred and just and reasonable level of KAWC's costs in meeting these requirements.

A. Labor Costs

1. *Projected Head Count*

Q. Please discuss how KAWC staffs its business operations.

A. We recognize our duty to staff our business in a manner consistent with the provision of safe and adequate utility service. Not only does this require that we pay our employees at levels consistent with the market as discussed later in my testimony, but it also requires a constant evaluation of the right mix of internal and contract labor, straight time versus overtime, training programs, and technology. In this vein, we continue to evaluate costs and expenses going forward, always looking for the best solution for the unique and changing challenges we face. A large portion of our cost structure is for labor, and as a position becomes vacant in our organization, we look to the value of that position. We review the overall need for that position and consider, among other things, whether that work should be performed by internal or contract labor, and whether the position should be transferred to another area or modified. Cost control and improved business performance are the goals of these efforts. We continue to evaluate appropriate positions

that KAWC will need to optimize new technology and most effectively serve our customers.

Q. What is the Company's anticipated head count during the future test year?

A. KAWC's labor force produces quality drinking water by, amongst other things, maintaining the production facilities and distribution systems, monitoring water quality, providing engineering services and supporting the efficient management of local operations. The Company has identified 168 full-time employees as the appropriate staffing level for our operations based upon each department's plans to continue providing safe, adequate reliable, and affordable service to our customers. As of March 31, 2025 KAWC had 140 full-time employees. The chart below reflects the status of vacant and new hire positions.

Approved Headcount in Case No. 2023-00191	**156**
Transfer to Service Company	(6)
Short-Term Duplicate Position	1
Positions Eliminated	(2)
New Positions Hired	11
Current vacancies to be refilled	(17)
Current Headcount	**143**
Short-Term Duplicate Position	(1)
Current Vacancies to be refilled	17
New Positions Posted	9
Future Headcount	**168**

Q. Why does the Company require additional head count above that which was authorized in the prior rate case?

A. The Order in the Company's 2018 rate case authorized a level of O&M expense based on a headcount of 156 full-time employees. The Company did not seek an increase in O&M expense related to additional headcount in its 2023 rate case, keeping staffing flat despite increasing our customer base by 6.6% through the end of 2024. Since the 2018 rate case, the Company has successfully mitigated the need for additional staffing by efficient work practices, improved technology and leveraging Service Company resources. The following factors are driving the need for additional staffing:

- Cross-connection control program - Kentucky-American is required to administrate the cross-connection control program for our service areas. This includes the identification of existing backflow devices on customer services that meet certain risk levels of potential backflow into our water system, recording of annual inspections performed by third parties, and the physical on-site inspection of new devices. In Case No. 2022-00425, Kentucky-American requested to leverage a contract American Water Works Company, Inc. signed with Backflow Solutions, Inc. (BSI) to serve as a third-party administrator of the existing annual certification process. As explained more fully in its last rate case, Case No 2023-00191, Kentucky-American's tariff would need to be changed to allow for the possibility that customers could be asked to pay a processing fee (but not by Kentucky-American) for certification that their backflow device is compliant. This BSI fee would have included the cost to outsource this work in lieu of adding employee resources. In both cases, the Commission denied this request. Two temporary

employees were hired to fulfill this requirement and they will be converted to two full-time employees at the time their current contract expires.

- Revised Lead and Copper Rule – As noted earlier in my testimony, the Company is required to comply with the revisions and improvements to the Lead and Copper Rule that include significant administrative, analytical, operational, and engineering requirements not previously mandated. Additional administrative, supervisory, labor, analytical, and engineering staffing resources have been or will be added to meet the new requirements of the rule revision and improvement, as shown in the chart below.
- Unaccounted for water – In 2024, the Company created full-time employee positions to perform leak detection and other activities dedicated to the reduction of unaccounted for water. This has been effective to drive a material reduction in water loss
- Construction oversight and engineering – KAWC delivered approximately $35 million of net capital spend in 2020. As shown in Exhibit JM-1 of John Magner's direct testimony, KAWC is anticipated to invest almost $92 million in Investment Projects and Recurring Projects in 2026. This is a significant increase in capital investment from 2020, and KAWC is requesting additional engineering headcount to manage the increased workload. Additionally, the Lexington-Fayette Urban County Government recently approved a significant expansion to Fayette County's Urban Service Boundary, which is the area of greatest development within the county due to the availability of municipal services such as sanitary sewer service.

KAWC anticipates an increase in the number of requests for developer-funded water main extensions, fire service connections, and large domestic services.

Q. What positions have been or are being added and what role will they perform?

A. The chart below provides the position names, their role, the number of positions that will be added for each role, and the current status of those positions.

Position	Role	Headcount	Status
Water Quality Supervisor – Lead & Copper	Management of new lead and copper program and supervision of field employees who support the program	1	Hired
Water Quality Operations Specialist – Lead & Copper	Administrative/clerical/planning support of the lead and copper program	1	Hired
Water Quality Specialist – Lead & Copper	Water sampling and analytical support necessary to comply with additional sampling requirements required under the revised lead and copper rule.	2	Recruiting; To be hired in 2025
Utility Maintenance Technician – Lead & Copper	Labor resources required to perform direct excavation and inspection of service lines in the field to verify service line material required under the revised lead and copper rule.	6	5 Hired & 1 to be hired in 2025
Utility Water Conservation	Labor resources required to perform leak detection and other activities dedicated to the reduction of unaccounted for water	4	Hired
Business Support Specialist – Cross-Connection Control	Administrative and field resources required to track, report and test cross-connection devices within the Company's water system	2	Temp Labor Hired; Replace with FTEs at end of Temp Contract
Engineering Project Manager	Manage KAWC's QIP main replacement program, including	1	To be hired in 2025

	coordination with elected officials and other stakeholders		
Sr. Project Engineer	Managing large, IP-level projects and providing technical assistance to the KAWC operations team.	2	Positions Posted; To be hired in 2025
Project Engineer	Manage and provide design services for RP-level transmission and distribution projects, including developer funded infrastructure projects.	1	Positions Posted; To be hired in 2025

Q. Will there be a reduction of overtime and contract services resulting from the increased headcount?

A. No. The additional employee resources are a direct response to new or changed requirements to meet system operational reliability needs and regulatory requirements.

2. *Performance Compensation*

Q. Please describe the Company's approach to its employee compensation program.

A. The Company aims to offer compensation that is on par with other companies Kentucky-American competes with for talent. Therefore, the Company targets its total direct compensation (inclusive of base and performance compensation) for each role near the market median (50^{th} percentile). Offering market-level total compensation ensures that Kentucky-American's compensation is not only competitive, but also reasonable.

Q. Please discuss the Company's decision to leverage a goal-based performance compensation plan as part of its total direct compensation.

A. By using a combination of base fixed pay and goal-based performance compensation, the Company satisfies a dual objective of having a competitive market-based total compensation for all employees, while continuing to motivate employees to achieve goals

that will 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 because goal-based performance compensation provides a clear communication of Company goals and targets and recognizes employee and Company achievement.

Q. Is KAWC's employee compensation expense a necessary cost to serving its customers?

A. Yes. Employee compensation is a 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. The Company is presenting evidence that its levels of total compensation are reasonable. Where the Company's total compensation level is in line with or below the market, as will be demonstrated in this case, regardless of the combination of fixed and performance-based components 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.

Q. Is the Company's employee compensation expense reasonable?

A. Yes. The Company retained the services of Willis Towers Watson ("WTW") to perform a total compensation study to determine if the total direct compensation[8] and total

[8] Total direct compensation includes base pay, plus target annual performance compensation and long-term performance compensation.

remuneration[9] provided to KAWC 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 detailed in the Direct Testimony of Company witness Robert V. Mustich. Therein, Mr. Mustich reached the following conclusions:

- The Company's total direct compensation programs are comparable to and competitive with market practices of other similarly-sized utilities and of industry generally.
- KAWC employees are generally below the competitive range of market median for each element of total remuneration.
- KAWC's market-based compensation programs are reasonable.
- The target total direct compensation and total renumeration provided to the Company's employees is already below the median competitive range of the market.

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, the Company's compensation philosophy and performance plan designs are consistent with market practice and overall total direct compensation (which includes base compensation and all performance compensation), as well as the Company's total renumeration (which also includes benefits), is below the competitive market range. Therefore, KAWC's total compensation expense is reasonable and prudently incurred.

[9] Total remuneration included total direct compensation plus benefits. *Id.*

Q. How is performance compensation provided to employees?

A. Performance compensation 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.

Q. How does performance compensation align employees with Company goals?

A. The Company believes that performance compensation offered as variable pay aligns our performance plans with achievement, by requiring that the employee and the Company "re-earn" the performance compensation through standards set via the APP and LTPP. If excellent performance is not sustained, variable pay may be impacted based on achievement of targets and the resultant Company plan funding.

Q. Please discuss how management determines which goals warrant inclusion within the APP.

A. Each year, American Water leadership[10] evaluates the APP goals and considers whether to make any changes. It considers best practices, goals of its proxy group and utility peers, as well as the Company's objectives and strategies for the upcoming year with an eye towards continuous improvement. To that end, American Water made a change to the 2025 APP safety goal from ORIR to SIIR to further enhance an enterprise-wide focus on avoiding serious injuries.

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

[10] This includes executive leadership, with the review and approval of the Executive Development and Compensation Committee ("Compensation Committee") and American Water's full board of directors.

A. The APP is designed to recognize and reward performance against key performance goals and targets that drive the Company's strategy. For 2025, the APP goals are as follows:

Annual Performance Plan for 2025

STRATEGY	GOAL	TARGET	WEIGHT
SAFETY	Serious Injury Incidence Rate (SIIR)	0.04 or less	7.5%
	Days Away, Restricted and Transfer (DART)	0.39 or less	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%
GROWTH	EPS Target	$5.52 to $5.72	50%
CUSTOMERS	Customer Satisfaction	Top Quartile	15%
	Drinking Water Compliance Notice of Violation (NOVs)	≤ 6 NOVs	5%
	Health-based Drinking Water Notice of Violation (NOVs)	≤ 2 NOVs	10%

Q. Please describe the LTPP.

A. American Water provides restricted stock units ("RSUs") and performance stock units ("PSUs") as long-term performance compensation under the LTPP. American Water's RSUs and PSUs are based on three-year vesting periods. RSUs are based on time-based vesting, meaning they vest in three equal installments over the three-year vesting period; and PSUs are based on performance vesting conditions, in addition to time.[11]

Q. Please briefly discuss the PSC's decision regarding recovery of performance compensation in KAWC's immediate prior general rate case.

[11] American Water uses a combination of compounded EPS growth, relative total shareholder return ("TSR"), and return on equity ("ROE") over a three-year performance period as the basis for measuring performance PSU awards.

A. The Commission disallowed a portion of KAWC's revenue requirement associated with performance compensation tied to financial performance. The Commission stated, "incentive compensation tied to financial performance measures overwhelmingly benefit shareholders over customers…"[12] and excluded the portion of performance compensation associated with financial performance from recovery.

Q. Do you agree that performance compensation related to financial performance benefits shareholders over customers?

A. No, I do not. This position assumes that customers will not benefit alongside shareholders and that an employee's performance can only benefit shareholders, not customers. As demonstrated below, KAWC's performance compensation aligns the interests of our customers, employees and investors—and not one party at the expense of the others.

Q. Could changing the Company's compensation structure resolve the question of the recovery of performance compensation?

A. Maybe. Based on Commission precedent, it appears the full market-based compensation would be completely recovered from customers if KAWC included costs equal to performance compensation in employees' base pay rather than awarding it through APP and LTPP. Changing the manner of compensating employees to remove the disputed method (APP and LTPP) and placing all of the compensation in base pay would likely result in recovering one hundred percent (100%) of the higher base pay in the revenue requirement. However, making this adjustment would not only be inconsistent with market practice, but it would also not be in the long-term interest of our customers because it would remove the strong incentive APP and LTPP provide employees to proactively work

[12] *In Re Kentucky American Water Co*., Case No. 2023-00191 Final Order (May 3, 2024), p. 17.

towards efficiency. In my experience, the APP and LTPP operational and financial metrics focus employees on managing the business more efficiently, improving customer service, and incentivize efficiency of production and field operations.

Q. How would the change of performance compensation pay to base pay impact the Company's culture?

A. The Company's culture is one of continuous improvement; therefore, goal setting and achievement is the driver of performance across the organization. Performance compensation helps guide a continuous improvement culture rather than one of complacence and entitlement. The Company provides a yearly scorecard with defined goals, showcasing its focus on annual organizational priorities. The scorecard metrics enable the entire organization to continuously evaluate and improve results based on benchmarks. Additionally, performance compensation serves as a catalyst for achievement and continuous improvement culture by incenting employees to work toward important business objectives.

Q. How do the APP and LTPP compensation plans benefit customers?

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

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, 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.

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

A. The financial goals of the APP and LTPP benefit customers in many ways. Achieving financial goals, such as targeted earnings per share ("EPS"), requires continual attention to operating efficiently. That is, unless the utility controls its operating costs, it cannot achieve a targeted EPS. This necessitates employees at all levels of the organization to remain focused on increasing efficiency, decreasing waste, and boosting overall productivity. EPS is guided by various drivers; however, achieving a targeted EPS requires attention to operating efficiency and cost control--that is, unless the utility controls its operating costs, it likely will not achieve a targeted EPS because operational efficiency, cost control practices, and net income are correlative. As a result, the Company controls operating costs

to the benefit of customers, because doing so mitigates rate increases. Consequently, when financial goals are achieved through efficiency, as is the case for the Company, the interests of customers, employees, and investors are aligned. Achieving the financial goals also helps ensure that the Company can gain access to capital at reasonable rates to the benefit of customers. KAWC witness Jennifer Gonzales, in direct testimony, addresses how maintaining a strong financial position allows the Company to attract capital at reasonable cost, which assists KAWC in its efforts to provide safe, reliable and affordable water service to its customers.

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.

Q. Is there other evidence of the tangible benefit to customers from the performance pay component of the Company's total market-based compensation program?

A. Yes. Again, it is important to consider the impact of a utility's financial health on its access to capital at reasonable costs. The Company's customers have benefitted from the Company's access to capital at favorable rates. Because utilities are capital intensive and must routinely and consistently access the capital markets at reasonable costs, customers ultimately benefit when their utility has the financial health to do so.

APP results also demonstrate additional customer benefits. KAWC is currently in the top half of the customer satisfaction survey and the Company has not incurred any

drinking water related NOVs. In addition, reducing OSHA incidents, particularly serious injuries, increases safety—customer safety and employee safety. No one can credibly dispute the benefits of improved safety. Further, reduced accidents reduce the attendant costs—workers' compensation, damage repair, etc.—which mitigates the operating costs that customers pay through rates. A commitment to work to achieve safety performance goals reflects an engaged workforce that is focused on providing safe, reliable and affordable service to KAWC's customers. Customers benefit from lower SIIR and DART results through more efficient employee efforts and lower costs from occupational illnesses and injuries.

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 high 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. For KAWC, the region includes companies in the manufacturing and service industries, in addition to other utilities and construction companies. 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.

Q. Please summarize why the Company's total market-based compensation, including its performance-based compensation component, should be recoverable through rates.

A. The performance-based compensation component of the Company's total market-based compensation plan aligns the interests of our customers, employees, and investors. The

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

B. Support Services

Q. What support services does KAWC obtain from the Service Company?

A. KAWC obtains certain support services from Service Company which are essential to operating and providing water service to Kentucky-American's customers, including customer service, water quality testing, innovation and environmental stewardship, human resources, communications, information technology, finance, accounting, payroll, tax, legal, engineering, accounts payable, supply chain, and risk management services. The Service Company, for example, operates a customer service organization ("CSO") that handles customer calls, billing, and collection activities for KAWC and its public utility affiliates. The CSO handles customer inquiries and correspondence, and processes service

order requests. Additionally, the Service Company operates Field Resource Coordination Centers which are responsible for tracking and dispatching service orders for our field representatives and distribution crews.

Q. How does Kentucky-American gain efficiencies from its relationship with American Water and the Service Company?

A. The support services KAWC receives from the Service Company are necessary for KAWC utility operations and provision of service to its customers. The Company benefits from economies of scale in getting these services and expertise on a shared basis at cost. In his direct testimony, Company witness Michael Adams provides testimony and analysis that demonstrates that the costs charged to Kentucky-American by Service Company for support services are reasonable.

Q. You mentioned the transfer of seven KAWC employees to Service Company. Why were these employees moved from KAWC to Service Company?

A. The GIS, SCADA, and customer advocacy functions have been centralized at the Service Company level to more efficiently and effectively deliver GIS, SCADA and customer advocacy services to the business. These were strategic organizational changes to drive knowledge sharing, standardization, process transparency and operational efficiency. In addition, centralizing these functions will allow Service Company to effectively leverage the overall enterprise SCADA, GIS and customer advocacy resource capacity to better respond to varying resource demands in different areas of the business at any given time, helping ensure regulated subsidiaries, including KAWC, have the support they need when they need it.

Q. Can you provide additional examples of the support services KAWC obtains from the Service Company?

A. Yes. The Service Company operates the American Water ("AW") Central Laboratory located in Belleville, Illinois – one of the most advanced water quality laboratories in the United States, which employs chemists, laboratory technicians, analysts, and support employees to perform water quality testing and research. The AW Central Laboratory supports KAWC's research and water compliance efforts through sophisticated testing and analysis. The AW Central Laboratory processes nearly 30,000 sample events each year, is certified in 17 states and territories, and is accredited to perform testing for 35 methodologies for over 220 compounds. The lab has a history of being on the forefront of monitoring, testing, identifying, and controlling analytes in advance of federal regulations, and regularly collaborates with the EPA to help develop federal drinking water standards and regulations. Our highly sophisticated analytical and research capabilities are why the EPA regularly taps into our lab and our research team to help develop federal drinking water standards and regulations. Another example is the support services KAWC receives from the Service Company's Information Technology ("IT") team. This IT team provides effective information technology support and solutions to meet KAWC's business needs. The Company's ongoing investment in technology enables KAWC to better manage its end-to-end view of its water operations from source to the tap. Further, this IT team works side-by-side with KAWC 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.

Q. What support services does KAWC receive from the Service Company's Supply Chain Team?

A. Through the size and breadth of American Water, the Service Company has continued to increase its purchasing power and obtain significant discounts on the necessary goods and services at prices that KAWC otherwise would be unable to obtain were we a separately owned water system. 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.

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:

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 the Company the best possible value. In addition, Supply Chain can leverage alternate suppliers or work with other American Water affiliates at times when supply of a critical chemical is limited.

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 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. American Water also uses the power of its spend to gain priority access to materials at times product is constrained. This allows the Company to complete more infrastructure work in a shorter time at a lower cost.

Logistics: Supply Chain is using other innovative methods to lower prices for the Company's customers. Supply Chain is currently ramping 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 lowering the cost of materials by reducing the company's freight expenses.

Fleet: Each year Supply Chain's fleet management team 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 negotiated with manufacturers' dealers and fleet management providers used for the procurement of vehicles. As one of the Top 100 commercial truck fleets[13] in the country, we are able to leverage our enterprise scale to achieve favorable outcomes in these negotiations.

Telecommunication: Supply Chain has worked with stakeholders on the information technology team to develop new strategies in the category. These actions will reduce the

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

number of suppliers, optimize processes, and provide more robust visibility into key metrics, which helps reduce or mitigate increases to such costs.

Q. Does this conclude your prepared direct testimony?

A. Yes, it does.

VERIFICATION

COMMONWEALTH OF KENTUCKY)
) **SS:**
COUNTY OF FAYETTE)

The undersigned, William Andy Lewis, being duly sworn, deposes and says that he is the Vice President of Operations for Kentucky-American Water Company, that he has personal knowledge of the matters set forth in the accompanying testimony for which he is identified as the responsible witness, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.

William A. Lewis

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 13th day of May, 2025.

Molly McCleese Van Over
Notary Public

My Commission Expires:
July 31, 2025

Notary ID: KYNP26988

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-AMERICAN WATER COMPANY FOR AN ADJUSTMENT OF RATES	**)** **)** **)**	**CASE NO. 2025-00122**

DIRECT TESTIMONY OF JOHN MAGNER

May 16, 2025

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is John Magner. My business address is 2300 Richmond Road, Lexington Kentucky 40502.

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

A. I am employed by Kentucky-American Water Company ("KAWC," "Kentucky-American" or "Company") as a Senior Manager of Engineering. I am currently serving as the Interim Director of Engineering.

Q. Have you previously filed testimony before this Commission?

A. Yes, I provided written testimony in Case No. 2023-00248, which was KAWC's application for a Certificate of Public Convenience and Necessity ("CPCN") for the construction of a water transmission main to the City of Millersburg.

Q. Please state your educational and professional background and state whether you are a member of any professional organizations.

A. I received a Bachelor of Science in Civil Engineering from the University of Kentucky in 2015 and a Master of Business Administration from the University of Kentucky in 2016. I am a licensed Professional Engineer in the Commonwealth of Kentucky.

I have been employed by KAWC since August 2022. During my career with KAWC, I have served as an Engineering Project Manager, Senior Project Engineer, Engineering Manager, Sr. Engineering Manager, and Interim Director of Engineering. Prior to joining KAWC, I worked for Stantec Consulting Services Inc. as a Water Resources Engineer where I both designed and managed municipal water, wastewater, and

stormwater infrastructure projects. I am a member of the Clean Water Professionals of Kentucky and Tennessee organization and the American Water Works Association.

Q. Please describe your duties as Interim Director of Engineering.

A. I am responsible for oversight of the planning, design, and delivery of the Company's capital program. Activities conducted as part of the capital program include the development of targeted and comprehensive planning studies; the performance of risk and resiliency assessments; the development of the capital investment plan/budget; rehabilitation of existing infrastructure; and the design and construction of capital investment projects for new and replacement distribution and production infrastructure. I also coordinate technical support for other departments within the Company.

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

A. My testimony will describe the planning, implementation, and governance of KAWC's capital program; describe and support the Company's capital investments in water utility plant and equipment that has or will occur since the Company's most recent general rate case through December 31, 2026, highlighting the Company's significant capital investments; and discuss the risks associated with furnishing public water service.

Q. Are you supporting any Exhibits along with your direct testimony?

A. Yes, I am supporting Exhibit JM-1, which provides KAWC's capital project spend forecast for the years 2026 through 2028 and is attached to my testimony. I am also sponsoring, or co-sponsoring, Exhibit 11, Exhibit 13, Exhibit 15 and Exhibit 16.

II. CAPITAL INVESTMENT PLANNING PROCESS

Q. Please describe the Company's capital investment planning process.

A. The Company uses a standardized Capital Program Management ("CPM") process to plan and manage all capital investments. KAWC performs comprehensive planning studies ("CPS"), targeted studies, pipeline prioritization modeling, and risk and resiliency assessments to identify and evaluate potential capital needs and develop investment recommendations to ensure that the appropriate projects are being prioritized. An overall strategic process prioritizes capital investment programs and projects based on various key criteria such as regulatory compliance, level of service, system demand, capacity, and safety. These prioritized capital investment programs and projects are then used to formulate the Company's five-year capital investment plan. Funding for the capital investment programs and projects contained within the capital investment plan is allocated based on numerous factors including current and future service needs, the physical condition of existing infrastructure, economic and risk factors, performance characteristics, regulatory compliance, and the potential for cost saving opportunities through coordination with other entities.

Q. Please describe the comprehensive planning studies, targeted studies, and risk and resiliency assessments in more detail.

A. A CPS is a master plan for capital improvements within KAWC's system. The CPS evaluates multiple key aspects of the system including system demand and customer growth, regionalization opportunities, sources of supply, production capacity, water quality, the distribution system, and system storage. Based on the evaluation of these elements, capital improvements that will allow the Company to continue to provide safe, adequate, and reliable service to its customers are identified. These projects are then prioritized based on considerations including safety, regulatory compliance, capacity and

growth, infrastructure renewal, efficiency, resiliency, reliability, likelihood and consequence of failure, and quality of service. These recommended improvements are developed for a 15-year planning horizon.

Targeted studies are completed when capital project needs arise between CPS cycles. These studies focus on specific issues/projects, but the projects in targeted studies are evaluated, developed, and estimated to the same degree as CPS projects.

Risk and resiliency assessments identify key assets within KAWC's system, as well as threats to these assets. Impacts to KAWC and its customers if these threats impact the key assets are also evaluated. Based on these evaluations, the resilience of KAWC's system is rated and recommendations to mitigate identified risks are developed.

Capital investment projects identified in the studies described above, as well as those identified as a result of pipe prioritization modeling, are key inputs to the Company's capital investment plan. Performing these studies allows the Company to invest more efficiently in projects that allow KAWC to continue to operate safely and efficiently and comply with current and future regulations.

Q. Please describe pipe prioritization modeling in more detail.

A. Because of the nature and significant amount of pipe within KAWC's system, the Company completes a specific evaluation for identifying capital investments in the distribution system annually. The company has implemented a geographic information system ("GIS")-based pipe prioritization modeling tool for identifying and prioritizing pipeline replacement investments across the system's approximately 2,400 miles of pipe.

The model prioritizes pipeline replacements by using risk modeling tools and historical operating data to evaluate the likelihood of failure ("LOF") and consequence of

failure (“COF”) for the pipes throughout KAWC’s distribution system. LOF is calculated based on performance data such as main break history, pipe loading (such as pipe operating pressure and bury depth), and pipe cohorts (categorized by material, diameter, and age). Statistical models are fitted using pipe failure data to calculate the survival probability of pipes in unique cohorts.

COF is evaluated in three categories: social, economic, and environmental impacts. The social impact of a pipe failure is based on hydraulic modeling results, such as the number of customers impacted and the volume of water that could not be conveyed if a pipe were to fail. The economic impact considers traffic disruptions (railroads, highways, etc.) and the difficulty of repairing a failed pipe (pipes crossing large rivers, levees, etc.). Environmental impacts are based on a pipe’s proximity to rivers and other water bodies.

Once the LOF and COF are calculated, they are then multiplied to calculate a risk score for each segment of pipe that is used for prioritization. The risk score is utilized alongside other local factors such as opportunities for restoration cost sharing and removing lead service lines to develop and prioritize main replacement programs.

Q. Please describe the general project categories in the Company’s capital investment plan.

A. The Company’s capital investment plan is comprised of two types of projects: recurring projects (“RP”) and investment projects (“IP”). RPs are capital projects and programs that the company executes on a regular, annual basis. IPs, on the other hand, are larger, unique projects with increased levels of planning, design, investment, and oversight. Projects become IPs once they exceed certain cost thresholds, as described later in this testimony. Both IPs and RPs are critical for KAWC to continue to provide safe and reliable service to

its customers and support long-term viability and resiliency of the Company's water systems.

Q. Please describe how the Company forecasts recurring projects.

A. RPs help the Company meet regulatory requirements, maintain an adequate water supply, renew aging infrastructure, maintain operational efficiency, and improve safety and security. They are scoped and prioritized based on various criteria such as regulatory requirements, risk and resiliency evaluation results, operational needs, asset condition assessment, pipe prioritization modeling results, and opportunities for cost savings, among others. Individual RP projects are generally not evaluated as part of CPS studies, so capital costs for RPs are trended from historical and forecasted data.

Q. Please describe the types of projects included in the capital investment plan that are considered recurring projects.

A. **Item DV (Projects Funded by Others)**: This item is for projects that are completely funded by others. DV projects typically include the installation of new mains, valves, hydrants, and large domestic and fire service connections. They can also include replacement of existing infrastructure that is not funded by Company expenditures. These projects support growth within KAWC's service area and are typically funded through deposit agreements or non-refundable contributions.

Item A: This item is for new water mains, valves, and other appurtenances that are funded by the Company, including upsizing of developer-initiated extensions; Company initiated and funded new mains that are not related to immediate growth, such as new mains that create additional hydraulic connectivity of provide increased transmission capacity; and new customer-initiated main extensions in accordance with the Company's tariff that may

include some customer contributions. This item may also include new mains that parallel existing mains to increase transmission capacity, improve reliability, or establish a new pressure gradient.

Item B: This item is for the scheduled replacement, renewal, or improvement of existing water mains including valves and other appurtenances. This line includes Qualified Infrastructure Program ("QIP") eligible projects, which consist of the replacement of aging water mains and work incidental to these main replacements such as valve and hydrant replacements, service renewals, and restoration.

Item C: This item is for the unscheduled replacement or restoration of existing water mains, including valves and other appurtenances. This item is primarily used for emergency replacements.

Item D: This item is for the relocation of existing water mains, including valves and other appurtenances, that conflict with work to be performed by others, such as municipal or state agencies. Replacement of services associated with the relocated mains are included in this item.

Item E: This item is for the installation of new hydrants and valves. Public hydrant installations within KAWC's system are included in this item. This item may also include the installation of vault structures.

Item F: This item is for the replacement of existing valves and hydrant assemblies that are no longer fully functional or have exceeded their useful life.

Item G: This item is for the installation of new services and meters or associated appurtenances such as corporation stops, setters, and shut-off valves.

Item H: This item is for the replacement of services or associated appurtenances.

Item I: This item is for the installation of new meters.

Item J: This item is for the replacement or improvement of existing meters and end-points.

Item K: This item is for the replacement of exiting Information Technology System ("ITS") equipment and systems that have failed or are obsolete.

Item L: This item is for installation or replacement of Supervisory Control and Data Acquisition ("SCADA") systems and equipment. Costs associated with SCADA, which is the computerized system for monitoring and operating our water treatment plants, booster stations, and other facilities, is separated from general ITS equipment costs captured in Item K.

Item M: This item captures costs associated with security equipment and systems such as fencing, alarm systems, cameras, software, and locking and detection systems.

Item N: This item is for the replacement or improvement of buildings, equipment, or furnishings for offices and operations centers.

Item O: This item is for purchasing and replacing vehicles including light- and medium-duty trucks and cars, as well as vehicle accessories.

Item P: This item is for the replacement or purchase of construction, shop, garage, meter reading, GPS, safety, and storeroom equipment.

Item Q: This item is for the new purchase or replacement of existing components of water supply, treatment, pumping, storage, and pressure regulation facilities, including associated building components and equipment. Replacements may be planned or made because of failure. This item also includes laboratory equipment and replacement of filter media used in treatment.

Item S: This item is for preliminary engineering studies primarily used for planning purposes. At the initiation of a construction project, these capital dollars are transferred to the appropriate project.

Item T12: This item includes the Company's investment in technology projects ("Enterprise Solutions") that are completed on an enterprise-wide basis for the benefit all of American Water's operating utilities (including KAWC). These are comprised of investments that upgrade and enhance our foundational technology, as well as customer facing platforms, among others, to continue to provide safe, reliable, and efficient service to customers.

Q. Please describe how investment projects are included within the Company's capital investment plan.

A. IPs are major projects that renew significant assets, allow the company to meet significant regulatory requirements, improve system capacity to meet increasing customer demand, prevent significant service interruptions, and mitigate risk. These projects are typically identified in CPS or targeted studies, although the Company recognizes the need to, at times, implement IPs to address emerging issues and risks.

Capital projects become IPs once they exceed established cost thresholds based on the appropriate item for the project. Cost thresholds for the various items are listed below.

- Items A, B, C, D = $2.5 million
- Item Q (filter media only) = $1.5 million
- Other Items = $500,000

Due to the size and significance of these projects, IPs are subject to additional oversight and governance. Specific IPs included in the forecast period are described later in this direct testimony.

Q. Please provide an overview of the Company's governance processes for capital investments.

A. The Company's CPM process provides a structured governance framework for both RPs and IPs. This framework utilizes routine reviews, consistent controls, and formal approvals to optimize the value of the Company's capital investments to achieve the goals of providing safe and reliable service to our customers.

KAWC has an interdisciplinary CPM committee that is comprised of representatives from executive leadership, operations, engineering, and finance. Each month, the committee meets with the Company's capital team, as well as other Company employees, to review monthly, year-to-date, and forecasted capital investment made by the Company. These reviews include evaluations of investments in each RP item, which were described previously in this testimony, as well as investments made in active IPs.

RPs with costs exceeding $100,000 are specifically reviewed and approved by the CPM committee. Additionally, each time an IP moves to a different project stage (new project, planning stage, preliminary stage, implementation stage), the CPM committee reviews the anticipated project budget and overall justification for the proposed investment. IPs cannot advance to a new project stage without formal approval from the CPM committee.

Q. Please describe measures the Company takes to control costs of capital projects.

A. Many factors influence the cost of capital projects, including regulatory and permitting requirements, supply chain interruptions, national and global economic conditions, and restoration requirements specified by public agencies. While many of these factors are out of the control of KAWC, the Company places a significant emphasis on controlling costs where possible. Measures KAWC employs to control capital investment costs are described below.

- Competitive bidding: All significant construction work is competitively bid to a prequalified group of independent contractors. These contractors are prequalified based on their ability to meet minimum safety and performance requirements, which are vetted through a robust third-party review program called ISNet. The ISNet program includes annual safety performance reviews, a review of safety performance data, and maintains contractors' insurance certificates with required Company insurance coverages for the type of work performed. KAWC continues to expand its prequalified contractor list to create a more competitive bidding environment.
- Material purchasing: The Service Company supply chain team receives competitive bids and negotiates pricing for materials, equipment, and supplies such as pipe, valves, fittings, hydrants, meters, chemicals, and other commodity items. By leveraging the large, combined buying power of American Water, KAWC is able to obtain favorable pricing and lead times. Functions such as fleet procurement have also become more centralized to leverage purchasing power for lower pricing.

Company witness Lewis provides additional discussion on how the supply chain team helps to control costs, to KAWC's benefit.

- Strategic project scoping: Where possible, KAWC scopes and bids projects in ways that promote more competitive bidding and efficient use of contractor resources. Scoping considerations may include combining similar work in one overall bid package to achieve economies of scale and reduce mobilization/demobilization costs; bidding work during specific times of the year that will minimize disruption during construction; or scheduling work for different projects at the same site so that construction resources can be shared between the two projects.

KAWC recently used strategic scoping and bidding on the Millersburg Transmission Main project. The overall project was divided into four contracts, which expanded the group of contractors that had adequate resources to bid on the project. Additionally, all horizontal directional drill installations were included in one contract, so that mobilization and demobilization costs associating with horizontal directional drill equipment would not be incurred by multiple contractors.

Additionally, KAWC has included projects ranging from 150 liner feet ("LF") of main replacement to 6,350 LF of main replacement in the current QIP program. This wide range of project sizes increases the bidding opportunities for contractors of various sizes.

- Restoration cost sharing: KAWC coordinates with various external parties, such as local municipal governments and other utility providers, to identify opportunities to share costs for restoration. KAWC will share information regarding upcoming

projects with these entities to identify areas where multiple parties will be working. In areas where there is overlapping work between multiple parties, costs for restoring roadways, sidewalks, and other surfaces can be shared. KAWC has recently designated a QIP Manager role that facilities cost sharing coordination for the QIP program.

- Value engineering: KAWC partners with both designers and contractors to reduce construction costs through value engineering. Designing capital projects in a way that makes construction more efficient can significantly reduce costs. After bids were received, KAWC partnered with the contractors on the Millersburg Transmission Main project to identify $4.3 million in cost savings through reductions in costly trenchless pipe installations, revisions to the proposed main alignment, and various other items. KAWC also works to specify equipment that is adaptable to meet potentially changing system conditions in the future. On the Owenton Booster Station project, for example, the pump station is designed in a way that pumps can be easily replaced with larger pumps to meet increased demand without having to construct an entirely new booster station or make significant modifications to the existing station.
- Internal design development: KAWC is performing more design for main replacement projects internally, as opposed to hiring consultants to develop the designs. Using internal design resources significantly reduces design costs.
- Planned and proactive main replacements: Planned and proactive replacement of aging mains, as opposed to replacing them after they've reached a point of failure, reduces pipe replacement costs. Based on an analysis completed by KAWC in

2023, the cost for repairing a main break is over $1,000 per linear foot, whereas replacing main as part of a planned main replacement project costs approximately $330 per linear foot. By using prioritization tools to plan main replacement programs and projects, KAWC is able to proactively replace mains that have a higher likelihood of failure, which reduces costs associated with emergency repairs.

III. DESCRIPTION OF PLANT ADDITIONS

Q. What level of capital investment is the Company seeking to recover in this case?

A. Kentucky-American is seeking to recover approximately $211.9 million in gross plant additions in this case. This reflects the amount of capital investment that the Company has invested or plans to invest in gross plant additions through December 31, 2026 in its water facilities since its last rate case.

Please see Exhibit JM-1 for the Company's forecasted capital investment from 2026-2028. Company witness Dominic DeGrazia describes how plant additions are reflected in rate base in his direct testimony.

Q. What portion of the total capital investment is in RPs?

A. Approximately $149.4 million of the $211.9 million of the gross plant additions pertains to RPs. As described previously in this direct testimony, RPs include investments such as main replacements, relocations, and extensions; hydrant and valve installations and replacements; meter and service line installations and replacements; vehicle and equipment purchases; water treatment equipment replacements; building improvements; and the installation of ITS and communications equipment that do not meet the cost thresholds to be categorized as IPs.

Q. What portion of the total capital investment is in IPs?

A. Approximately $62.5 million of the $211.9 million of the gross plant additions pertains to IPs that support the adequacy and resiliency of the Company's water facilities. These projects are central to maintaining and enhancing the reliability and resiliency of the Company's systems, to continuing to provide the high quality and reliable water service to customers, and to supporting the long-term viability and resiliency of the Company's water system. The Company's IPs are discussed in greater detail below. Cost information is approximate and based on current cost information.

Q. Please describe the IPs that have been or are planned to be placed into service between the Company's last rate case and the end of the future test year and are included in rate base as part of this rate case filing.

A. Significant IPs that were placed into service or are planned to be placed into service from the Company's last general rate case through December 31, 2026 are described below. I have presented these IPs in the order of their respective projected in-service dates. Thus, IPs that have already been placed in service since February 1, 2025 are presented first, followed by the IPs that are projected to be placed in service on or before December 31, 2026 (the end of the forecasted test year). Along with a description of the IPs, actual or projected in-service dates and the amount of associated capital investment are provided for each IP.

I12-020113 Millersburg Transmission Main ($20,400,000): KAWC has provided water service to the City of Millersburg since 2014. The Millersburg water system, however, is disconnected from the rest of KAWC's system. KAWC is unable to supply Millersburg

with water treated at one of the Company's water treatment facilities and therefore solely relies on water purchased from another utility to supply Millersburg.

KAWC's water purchase agreement with the supplying utility only obligates the supplying utility to sell up to a daily average of 200,000 gallons of water per calendar month to KAWC. This amount is not sufficient to meet the demand of the Company's retail customers in Millersburg and KAWC's two wholesale customers served via the Millersburg system, Harrison County Water Association and Nicholas County Water District. Events such as fires and water main breaks can result in service interruptions for customers.

In addition to challenges related to the volume of water supplied, purchasing water also results in water quality challenges. Water quality monitoring performed by KAWC has routinely measured elevated levels exceeding regulatory maximum contaminant levels ("MCL") of total trihalomethanes ("TTHM") and total haloacetic acids ("HAA5") in the supplied water, which indicates the potential for disinfection byproduct ("DBP") formation. To reduce the risk of DBP formation, KAWC has to filter the purchased water through granular activated carbon filters and rechlorinate the water prior to supplying it to customers. This increases operational costs associated with supplying water to Millersburg.

In August 2023, KAWC applied for a CPCN (Case No. 2023-00248) to construct a new water main to Millersburg so that the Company can supply water treated at KAWC water treatment facilities to Millersburg. The CPCN was approved in December 2023. The project involves the construction of approximately 12.5 miles of 16" and 12" water main from KAWC's existing Central Division system in southern Bourbon County to Millersburg. This main will provide a significantly improved water supply to Millersburg,

which will result in fewer service interruptions for customers, increased fire protection, improved water quality, and sufficient capacity to support growth and economic development in the region. Because this project improves water supply to Millersburg, operational costs will also be reduced through a reduction in purchased water, primarily because the Company will no longer need to purchase additional supply from the City of Paris. Company Witness Robert J. Prendergast discusses the associated adjustment to Purchased Water expense in his direct testimony. The project was placed into service in February 2025. Images of the construction are below.

Jack-and-bore (left) and open-trench (right) pipe installations for the Millersburg Transmission Main Project

I12-020107 Kentucky River Station No. 1 Gravity Thickeners ($10,900,000): At KAWC's Kentucky River Station No. 1 ("KRS1") surface water treatment plant, sludge that accumulates during the flocculation and sedimentation processes is currently stored in washwater holding tanks and then pumped into a system of geotubes, with excess sludge and water being conveyed to lagoons for final settling. The sludge that is conveyed to the lagoons settles in the bottom of the lagoons, while the remaining water is dechlorinated and discharged to the Kentucky River. The settled sludge in the lagoons must be dredged

when there is no longer adequate storge in the lagoons for settling. This residuals handling process is no longer adequate for the operation of the 40 million gallon per day ("MGD") treatment plant. Due to factors such as increased turbidity in the Kentucky River that results in more solids being produced during the treatment process, the lagoons have to be dredged more frequently. This increases operational costs associated with treatment at KRS1. Additionally, each time sludge is dredged from the lagoons, soil loss from the lagoon embankments occurs, which is a potential safety concern.

To address the residuals handling process at KRS1, a Solids Handing Master Plan was developed, which includes short, medium, and long-term projects to improve residuals handling at this water treatment plant. The short-term project involved the installation of geotubes, which are large filter bags, to filter and store residuals from water leaving the washwater holding tanks before the water is conveyed to the lagoons. The geotubes have been in operation for several years.

The Gravity Thickener project is the medium-term improvement identified in the master plan. This project involves the construction of two 70' diameter concrete tanks that allow for the equalization and thickening of sludge. This results in a more even distribution of flow to the geotubes and lagoons. Additionally, the sludge that is captured in the thickener tanks will be more consistent and will feature a higher solids content, which will make the long-term residuals handling improvement, a sludge press facility, more effective. In addition to the two large concrete thickening tanks, this project includes the construction of a thickened sludge pump station, supernatant pump station, and approximately 2,000 linear feet of piping ranging in size from 8" to 30" in diameter. This project was placed into service in March 2025. An image of the project is below.

KRS1 Gravity Thickeners Project, including the two 70' diameter concrete tanks

I12-020117 New Circle Road Widening Main Relocations ($3,000,000): This project includes the relocation of approximately 6,000 LF of water main ranging in size from 6" to 24" in diameter for the Kentucky Transportation Cabinet's ("KYTC") roadway project along New Circle and Leestown Roads. The main relocations include several trenchless installations of 24" water main. The project is planned to be placed into service in May 2025.

Water main installation for the New Circle Widening Main Relocations Project

I12-3000014 KRS2 WTP Bank Stabilization ($800,000): The raw water intake for KAWC's Kentucky River Station No. 2 ("KRS2") surface water treatment plant is located on Pool 3 of the Kentucky River. The river bank surrounding the raw water intake structure has experienced ongoing erosion, which threatens the integrity of the intake structure and poses a safety risk to operational personnel. This project will restore and stabilize the stream bank with an engineered rock toe to mitigate further erosion. The project is planned to be placed into service in May 2025.

I12-300013 Owenton Booster Station ($800,000): This project will include the installation of a new approximately 350 gallon per minute ("gpm") booster station in KAWC's Norther Division to improve pressures in northern Owen County and reduce the need for purchased water. A new control valve vault will also be constructed to improve the functionality of the distribution system once the booster station is operational. This project is expected to be placed into service in October 2025.

I12-XXXXXX Rockwell Road Reinforcement ($1,500,000): This project will replace approximately 8,000 LF of aged and undersized PVC water main along Rockwell Road in Clark County. The main will be upsized, which will improve system hydraulics and fire protection for the Company's customers in this area. The project is planned to be placed into service in October 2025.

I12-020118 Jacobson Reservoir Outlet Improvements ($2,000,000): The Jacobson Reservoir serves as a source of water for KAWC's Richmond Road Station ("RRS") water treatment plant. KAWC has a 112-year-old outlet tower near the reservoir's dam where water can be transferred into (from the Kentucky River) and out of the reservoir. An image of the structure is below. The tower structure features a series of valves that control flow

through the structure, but many of the valves are inoperable. The inlet/outlet pipe through the dam embankment is aging and requires rehabilitation. Additionally, the dam's principal spillway, originally constructed in 1906, is in need of repair.

This project will include structural repairs to the intake structure, lining of the inlet/outlet pipe through the dam, and replacement of several of the vales in the outlet tower. These improvements will improve the integrity of the tower and piping and provide for more operational flexibility when drawing water from the reservoir, which is anticipated to reduce treatment costs. Anchoring will be installed in the principal spillway structure, which will improve safety and mitigate the risk of a dam failure. The construction of a coffer dam will be required, as the lining of the inlet/outlet pipe must be performed in a dry environment. This project is planned to be placed into service in December 2025.

Existing Jacobson Reservoir dam (foreground) and outlet tower (background)

Existing Jacobson Reservoir principal spillway

I12-020102 KRS1 Low Service Pump No. 3/Transfer Pump No. 9 Replacements ($4,000,000): The intake for the KRS1 water treatment plant features six 15 MGD low service pumps that pump water from the river to the treatment plant. Additionally, KRS1 has two 18 MGD transfer pumps that pump raw water drawn from the river past the KRS1 water treatment plant to supply the RRS water treatment plant. The low service and transfer pumps are critical for the operation of KAWC's two largest water treatment facilities.

Low service pump No. 3 and transfer pump No. 9 have exceeded their useful service life and require increased maintenance to remain operational. Additionally, these pumps experience decreased efficiency due to their age and changes in the hydraulics of KAWC's system since their installation. This decreased efficiency increases operational costs. This project will replace both pumps and the associated motors, as well as add variable frequency drives. Thes improvements will reduce maintenance and operation

costs, as well as improve reliability and resiliency of KAWC's water treatment operations. This project is planned to be in service in February 2026.

I12-XXXXX Kentucky River Station 2 Transfer Switch ($1,100,000): Power loss is a frequent occurrence at the Kentucky River Station 2 ("KRS2") water treatment plant in Owen County. This project will consist of installing an automatic transfer switch to the KRS2 electrical gear. This transfer switch will enable the treatment plant's generator to start automatically and the plant to remain operational without interruption during a loss of power event. This will also improve safety by eliminating the need for an employee to manually switch the gear to generator power. This project is planned to be placed into service in May 2026.

I12-020082 KRS1 UV Facility ($9,900,000): In 2006, the US EPA adopted the Long Term 2 Enhanced Surface Water Treatment Rule ("LT2"). This regulation builds off past rules that seek to mitigate health risks associated with microbial pathogens and disinfection byproducts ("DBP") in drinking water.[1] LT2 has a specific focus on the microbial contaminant Cryptosporidium. The rule requires water systems to monitor their source water for the presence of Cryptosporidium. Based on the results of the monitoring, systems are placed into various regulatory "Bins" that determine the level of additional treatment for Cryptosporidium that is required. KAWC's systems were classified into Bin 2 based on source water monitoring, which requires an additional 1-log removal of Cryptosporidium. Company witness Lewis, in his direct testimony, discusses how KAWC responded to LT2 by installing ultraviolet light ("UV") disinfection treatment at two of the Company's surface water treatment plants.

[1] *See* EPA Fact Sheet - Long Term 2 Enhanced Surface Water Treatment Rule (available at https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=2000E999.txt).

This project will provide the KRS1 water treatment plant with the required 1-log removal of cryptosporidium using UV disinfection, which is the treatment method selected based on the US EPA's toolbox evaluation and is consistent with the treatment method for the two surface water treatment plants discussed by Mr. Lewis. The project will include the installation of two UV reactors; associated piping, electrical and controls equipment, and other appurtenances; and housing for the equipment. This project is planned to be placed into service in August 2026.

I12-XXXXXX KRS1 Screw Press ($7,000,000): The KRS1 Screw Press project is the long-term improvement identified in the KRS1 Solids Handling Master Plan. A sludge screw press will be installed to dewater the sludge produced during the water treatment process. The press will be housed in a dedicated building and dewatered sludge will be hauled to an approved reclamation area for disposal. The screw press will eliminate the need for the existing lagoon system, which eliminates operational expense associated with dredging the lagoons. The project is planned to be placed into service in October 2026.

IV. RISKS ASSOCIATED WITH FURNISHING PUBLIC WATER SERVICE

Q. What regulations and agencies govern the quality and quantity of water provided by KAWC?

A. An extensive and complex combination of federal, state, and local regulations govern water quantity, water quality, and other aspects of water utility operations. Drinking water quality is addressed by a combination of federal regulation under the Safe Drinking Water Act of 1973 and state regulation under Title 401 of the Kentucky Administrative Rules Chapter 8. The Safe Drinking Water Act established the United States Environmental Protection Agency ("US EPA") as the federal regulatory body governing drinking water. US EPA has

established standards for contaminant levels in drinking water,[2] mandatory treatment methods, monitoring and reporting requirements, and public notification mandates in the event of contaminant level or treatment method noncompliance.[3] The EPA has granted "primacy" to the Kentucky Division of Water ("DOW") to administer the federal regulatory standards at the state level.

Regulatory MCLs determine the maximum allowable level for specific substances within drinking water. These MCLs also include requirements for monitoring, remediation, and public notice when MCLs are exceeded. There are currently MCLs for over 90 individual organic and inorganic chemicals, including groups like TTHMs, HAA5, and E. coli bacteria indicator microorganisms.[4]

Numerous chapters of the Kentucky Revised Statutes also provide regulations for water providers.

Q. Please describe significant regulations that impact KAWC's operations and capital investment plans.

A. Summaries of significant regulations that currently impact or may impact KAWC's operations in the future are provided below.

Lead and Copper: In 1991, the US EPA published the Lead and Copper Rule ("LCR") to protect public health and reduce exposure to lead in drinking water.[5] The US EPA has subsequently issued updates to LCR, including the Revised Lead and Copper Rule in 2021 and the Lead and Copper Rule Improvements in 2024. As Company witness Andy Lewis

[2] See EPA Webpage – National Primary Drinking Water Regulations (https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations).
[3] See 40 C.F.R. Parts 141-143.
[4] See EPA Webpage – Drinking Water Regulations (https://www.epa.gov/dwreginfo/drinking-water-regulations).
[5] See EPA Webpage – Lead and Copper Rule (https://www.epa.gov/dwreginfo/lead-and-copper-rule).

discusses in his direct testimony, these rules require, among other things, that drinking water providers develop an inventory of materials for both company- and customer-owned service lines. Based on data collected as part of the inventory process, water utilities must develop a schedule for replacing all service lines that are either lead or galvanized downstream of lead.

Disinfection Byproducts and Pathogens: DBPs are produced by the interaction of disinfection agents (such as chlorine) with constituents (such as organic compounds) that naturally occur in source water. Consumption of DBPs may increase various health risks. To reduce exposures to DBPs, US EPA has published a series of rules regarding DBPs in drinking water. The Stage 1 and Stage 2 Disinfectants and Disinfection Byproducts Rules[6] (DBPR) limit concentrations of DBPs such as chlorite, bromate, TTHM, and HAA5. The Stage 2 DBPR, which was adopted in 2006, focused specifically on monitoring for and reducing TTHM and HAA5.

Additionally, the US EPA has adopted numerous rules to limit microbial pathogens in drinking water. Most notably, LT2[7] was adopted in 2006 to reduce illness linked to the microbial pathogen Cryptosporidium, which is highly resistant to standard water disinfectants. LT2 targets additional Cryptosporidium treatment requirements in facilities that take steps to decrease DBP formations that result from chemical water treatment.

To satisfy both the DBPRs and LT2 regulations, water providers must carefully balance water treatment and source water monitoring to satisfy the dual goals of killing

[6] See EPA Webpage – Stage 1 and Stage 2 Disinfectants and Disinfection Byproduct Rules (https://www.epa.gov/dwreginfo/stage-1-and-stage-2-disinfectants-and-disinfection-byproducts-rules).
[7] See EPA Webpage – Surface Water Treatment Rules (https://www.epa.gov/dwreginfo/surface-water-treatment-rules).

microbial contaminants (such as Cryptospordium) while also avoiding unacceptable levels of DBPs.

PFAS: In June 2024, the US EPA established the final National Primary Drinking Water Regulation to establish MCLs for six per- and polyfluoroalkyl substances ("PFAS")[8]. PFAS have been used in a wide variety of consumer and commercial products for decades and can be present in water sources. Elevated levels of PFAS may result in adverse health effects. If sampling indicates PFAS levels in water sources exceed the regulatory MCLs, treatment measures must be implemented to reduce the PFAS levels. Please see the Direct Testimony of Company witness William Lewis for discussion on KAWC's sampling for PFAS.

Q. Please describe the impacts and risks to KAWC associated with the regulations described in the previous question.

A. Each of the regulations described in the previous question impact the Company's operations and investments, as described below. The number and breadth of regulations governing drinking water has expanded in recent years, which has resulted in additional operational and cost impacts to KAWC.

Lead and Copper: Developing the service line material inventory requires significant expenses related to customer engagement and data reviews, as well as physical identification and verification of service line materials. Methods such as hydro-excavation are anticipated to be utilized to physically observe service lines. Once the inventory is complete, the Company is required to develop a schedule for replacing all service lines that are lead or galvanized, downstream of lead. The Company's capital investment plans may

[8] See EPA Webpage – Per- and Polyfluoroalkyl Substances (PFAS) Final PFAS National Primary Drinking Water Regulation (https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas).

be impacted by the number of service lines that must be replaced to remain in compliance with the regulations.

Disinfection Byproducts: KAWC has experienced significant impacts to operations and investment resulting from the Stage 2 DBPR and LT2. KAWC made significant investments to implement UV disinfection systems at its RRS and KRS2 water treatment plants to achieve an additional 1-log removal of Cryptosporidium that is required by LT2. A UV system for the 40 MGD KRS1 water treatment plant is currently under design and is planned to go into service in 2027. This project is estimated to cost approximately $9.9 million.

PFAS: To date, KAWC's source water testing for PFAS has not indicated the need for additional treatment to be implemented. However, if testing should ever indicate the need for additional treatment, the Company could incur significant capital and operational expense to implement and operate new treatment systems at its existing water treatment plants.

Q. Does climate variability pose additional risks for water utilities such as KAWC?

A. Yes, water utilities are, by their nature, resource dependent. This makes them susceptible to the effects of climate variability, particularly stresses on water resources and system recovery. Climate variability can create severe challenges with regards to maintaining a reliable water supply.

The safe yields of water supply sources have historically been evaluated based on historical climatic patterns, data from so called "droughts of record," or dry period frequency analysis. However, changing climatic conditions suggest that historical hydrologic data may not accurately predict future conditions. Thus, the calculated safe

yield of streams, reservoirs and groundwater wells are put in question as the effects of climate variability are experienced. Thus, in response to climate variability, water supply systems must address the risks posed to the reliability and resilience of their sources.

Additionally, extreme weather events pose a risk to treatment and distribution infrastructure. In the southeast, "increases in the frequency of heavy rain events and lengthening of dry spells between rain events at some locations in the region make water resource unpredictable."[9] That means we can expect more frequent and intense high-precipitation events and floods, along with highly damaging storm events. In Kentucky specifically, numerous severe flooding and tornado events have occurred in various parts of the Commonwealth over the past several years, which has resulted in damage to infrastructure in the local water systems.

The effects of climate variability impact the resilience of a system to withstand an event without interruption of service or, if service is interrupted, to restore the service in a timely manner. Like all large users dependent on electricity from the grid, water utilities must plan for power outages and develop plans for maintaining continuity of operations when such outages occur. Nonetheless, recent weather patterns combined with the issue of aging infrastructure are causing utilities to review traditional planning and design criteria. The design standards for supplies, treatment plants, pump stations, and tanks are taken together with a goal to achieve a level of zero service outages. The so-called "new normal" has led experts to look beyond traditional reliability and emergency planning into a world that needs the speed of recovery and resiliency for more widespread and damaging events. Updating infrastructure to keep up with the increase in extreme weather and ensuring that

[9] Fifth National Climate Assessment, Ch. 22 – Southeast (https://nca2023.globalchange.gov/).

adequate service can be maintained for extended time periods after an extreme event is just as important as addressing the aging infrastructure.

Q. Does this conclude your prepared direct testimony?

A. Yes, this concludes my testimony.

VERIFICATION

COMMONWEALTH OF KENTUCKY)
) SS:
COUNTY OF FAYETTE)

The undersigned, John Magner, being duly sworn, deposes and says that he is a Senior Manager of Engineering currently serving as the Interim Director of Engineering for Kentucky-American Water Company, that he has personal knowledge of the matters set forth in the accompanying testimony for which he is identified as the responsible witness, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.

John Magner

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 6th day of May, 2025.

Molly McCleese Van Over

Notary Public

My Commission Expires:

July 31, 2025

Notary ID: KYNP26988

Kentucky American Water
Capital Project Spend Forecast
2026-2028

Business Unit	Project #	Project Title	2026	2027	2028
		RECURRING PROJECTS			
Kentucky	R12-**A1	Mains - New	1,112,000	750,000	1,770,000
Kentucky	R12-**B1	Mains - Replaced / Restored	31,676,226	34,248,951	32,034,390
Kentucky	R12-**C1	Mains - Unscheduled	2,323,881	2,323,906	1,910,000
Kentucky	R12-**D1	Mains - Relocated	1,408,113	1,508,457	1,402,500
Kentucky	R12-**E1	Hydrants, Valves, and Manholes - New	419,500	478,900	498,300
Kentucky	R12-**F1	Hydrants, Valves, and Manholes - Replaced	3,010,604	3,010,604	2,306,800
Kentucky	R12-**G1	Services and Laterals - New	3,458,000	3,571,500	3,684,000
Kentucky	R12-**H1	Services and Laterals - Replaced	1,572,630	1,572,627	1,205,000
Kentucky	R12-**I1	Meters - New	0	0	0
Kentucky	R12-**J1	Meters - Replaced	10,538,425	10,543,272	7,508,865
Kentucky	R12-**K1	ITS Equipment and Systems (Local)	370,463	828,193	419,759
Kentucky	R12-**L1	SCADA Equipment and Systems	1,126,500	1,250,000	1,660,000
Kentucky	R12-**M1	Security Equipment and Systems	625,000	625,000	625,000
Kentucky	R12-**N1	Offices and Operations Centers	525,000	524,999	1,345,000
Kentucky	R12-**O1	Vehicles	1,055,000	1,133,500	1,247,500
Kentucky	R12-**P1	Tools and Equipment	999,356	595,955	880,200
Kentucky	R12-**Q1	Process Plant Facilities and Equipment	4,347,070	3,624,256	3,700,000
Kentucky	R12-**S1	Engineering Studies	125,000	500,000	700,000
Kentucky	R12-**T12	ITS Equipment and Systems - Enterprise Solutions	6,221,401	7,458,160	6,996,000
		TOTAL RPs	**70,914,167**	**74,548,279**	**69,893,313**
		INVESTMENT PROJECTS			
Kentucky	I12-020059	KRS2 Transfer Switch	904,000		
Kentucky	I12-020082	KRS1 UV Facility	9,000,000		
Kentucky	I12-020095	Mercer Rd Booster Station	250,000	1,400,000	
Kentucky	I12-020097	Hall Booster	283,120	800,000	
Kentucky	I12-020102	KRS1 Low Service Pump No. 3/ Transfer Pump No.9	3,009,001		
Kentucky	I12-02AXXX	KRS 1 Screw Press	6,000,000	1,000,000	
Kentucky	I12-02BXXX	KRS1 Sedimentation Basin Installation			2,000,000
Kentucky	I12-020118	Jacobson Reservoir Outlet Improvements	200,000		
Kentucky	I12-02DXXX	Woodlake Booster		1,196,550	1,500,000
Kentucky	I12-30EXXX	KRS 2 Chlorine Gas Conversion	300,000	6,000,000	
Kentucky	I12-02GXXX	KRS 1 Rapid Mix/ Ferric Tank Replacement			3,000,000
Kentucky	I12-02HXXX	JRES Dam Spillway Expansion		1,000,000	4,000,000
Kentucky	I12-02IXXX	Hamburg Area Tank/ Pressure Improvements	500,000	500,000	5,000,000
Kentucky	I12-02LXXX	Winchester Road Reinforcement	500,000	39,835	4,960,165
		Total Investment Projects	**20,946,121**	**11,936,384**	**20,460,165**
		Total RP and IPs	**91,860,289**	**86,484,663**	**90,353,478**

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-	**)**	
AMERICAN WATER COMPANY FOR AN	**)**	**CASE NO. 2025-00122**
ADJUSTMENT OF RATES	**)**	

DIRECT TESTIMONY OF MAX McCLELLAN

May 16, 2025

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Max McClellan. My business address is 1 Water Street, Camden, NJ 08102.

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

A. I am employed by American Water Works Service Company, Inc. ("AWWSC") as a Principal Regulatory Analyst.

Q. Have you previously filed testimony before this Commission?

A. Yes. During my employment with Duke Energy Business Services, LLC, I provided testimony regarding long-term load forecasting on behalf of Duke Energy Kentucky in Case No. 2022-00372.

Q. Have you previously filed testimony before any other regulatory commissions?

A. Yes. During my employment with AWWSC, I have provided testimony regarding the cost of service, rate design proposals, and revenue projections for Missouri-American Water Company in its most recent general rate case, Case No. WR-2024-0320.

Q. Please state your educational and professional background and state whether you are a member of any professional organizations.

A. I received a Bachelor of Science degree in Mathematical Decision Sciences from the University of North Carolina at Chapel Hill in 2013. I have been employed by AWWSC since March 2024 in my role as Principal Regulatory Analyst. Prior to my employment with AWWSC, I was employed by Duke Energy from October 2018 through March 2024. In my most recent position at Duke Energy, I was a Principal Load Forecasting Analyst. In that position, I had responsibility for planning, evaluation, and operational management of Duke Energy's long-term load forecasts in Ohio and Kentucky, as well as direct

responsibility for electric and natural gas sales forecasting, electric peak demand forecasting, and customer count forecasting. I have more than five years of utility experience covering a wide range of issues including integrated resource planning, electric load forecasting, gas volumes forecasting, electric load research, rates, tariff administration, and energy efficiency. I also have more than five years of experience in the retail pricing and structuring of electric and natural gas products.

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

A. The purpose of my Direct Testimony is to sponsor KAWC's rate design proposals and revenue projections, including adjustments to KAWC's historical billing determinants. Specifically, I will address the following issues:

- Class Cost of Service
- Water Rate Design
- Analysis of KAWC Water Consumption
- Revenue Calculations

Q. Please identify the schedules you will be sponsoring and for which you will be providing testimony.

A. I am sponsoring the following Company Schedules attached to my Direct Testimony:

- Exhibit MWM-1: Residential and Commercial Usage Modeling

In addition to the exhibit attached to my direct testimony, I am also sponsoring the following filed exhibits:

- Exhibit 25 (Financial Forecast – Water Sales (Gallons))
- Exhibit 26 (Financial Forecast – Customer Forecast)
- Exhibit 36 (Cost of Service Study for Water Service)

- Exhibit 37 (Accounting Schedules)

I am also sponsoring workpapers to support Exhibits 25, 26 and 37 labeled Revenue WP Support.

II. CLASS COST OF SERVICE STUDY

Q. What is a class cost of service study?

A. A class cost of service study ("COSS") is an analysis that calculates the total investment and operating costs incurred by a utility to provide service to various customer groups, or service classes. Because the analysis is completed by customer class, the study is often referred to as a "class cost of service study."

Q. Is the Company filing a COSS for water service in this proceeding?

A. Yes. The Company's COSS for water service is provided in Exhibit 36.

Q. Does the American Water Works Association ("AWWA") provide guidance on the appropriate methods to be used in conducting cost of service studies?

A. Yes. The AWWA M1 Manual, titled "Principles of Water Rates, Fees, and Charges," provides guidance on the appropriate allocation methodologies to use in allocating different types of costs to customer classes.

Q. Has the Company relied on the recommendations made in the AWWA M1 Manual in conducting its COSS submitted in this case?

A. Yes. Specifically, the AWWA M1 Manual outlines the use of the Base/Extra capacity method to allocate production and distribution costs to customer classes. The Company uses this Base/Extra capacity method in its COSS as I describe later in my Direct Testimony.

Q. Please describe the Company's COSS.

A. The Company's COSS allocates the total revenue requirement for its water operations to the various cost categories listed below. The revenue requirement for each of these cost categories is then allocated to the various customer classes it serves, with different cost categories allocated to customer classes using a class allocation factor that differs depending on the nature of the costs. In this study, the Company's aggregated cost of water service was allocated to the following customer classifications:

- Residential
- Commercial
- Industrial
- Other Public Authorities
- Sales for Resale
- Miscellaneous
- Private Fire
- Public Fire

The study was performed in accordance with generally accepted principles and procedures and results in the relative cost responsibilities of each class of customers. The allocated cost of service provides one input to designing customer rates under the Company's proposed rate design to produce the revenues that will yield the proposed revenue requirement in this case.

Q. How is the Company's COSS organized?

A. The Company's COSS is organized into five different tabs, or sections:

- The "Summary" tab allocates the revenue requirement for each cost category to customer class and summarizes the results of the cost allocations by customer class and business function to get a total revenue requirement by class and business function. The

"Summary" tab also compares the revenue requirements by customer class to Test-Year revenues under Current Rates;

- The "Account Detail" tab contains rate base, depreciation, and operations and maintenance ("O&M") balances by account and allocates each account to a cost category;
- The "Usage Statistics" tab contains usage information by customer class and other information necessary to calculate class allocation factors for the "Account Detail" tab;
- The "Class Allocators" tab provides detailed calculations of all class allocation factors used in the COSS; and
- The "Allocation Summary" tab provides a summary of the class allocation factors and the allocation factors used to allocate costs to cost categories.

Q. What are the various cost categories that the Company uses to group individual accounts?

A. The cost categories that the Company assigns to specific classes are as follows:

- Variable cost
- Capacity (Fixed) costs
- Source of Supply
- Water Power and Pumping Expenses
- Water Treatment
- Transmission Mains
- Distribution Mains
- Storage Costs
- Metering Cost
- Service Line Costs
- Customer Related Costs
- Hydrants

Q. Please describe how the individual accounts that make up the Company's revenue requirement are assigned to a cost category.

A. Most of the accounts that make up the Company's revenue requirement are directly assigned to a single cost category. Examples of this include net plant for metering equipment, fuel and power for water pumping, and water treatment labor expenses. Accounts not directly assignable to a single cost category are allocated among cost categories based on appropriate allocation factors. Examples of this include general and intangible plant, miscellaneous rate base deductions, administrative and general ("A&G") expenses, and payroll taxes. These accounts are allocated to cost categories based on net plant, O&M, or labor dollars associated with each cost element depending on the account.

Variable Costs

Q. Please describe what variable costs are and how variable costs are allocated to customer classes.

A. Variable costs are costs that tend to vary directly with the amount of water produced and consumed and are allocated to customer classes in direct proportion to each class's annual water consumption. Variable costs refer to purchased water, purchased fuel and electric power, treatment chemicals and waste disposal costs.

Capacity Costs - General

Q. Please describe what capacity costs are and how capacity costs are allocated to customer classes.

A. Capacity costs refer to the costs of owning, operating, and maintaining the Company's water production, pumping, and distribution system that do not vary directly with the amount of water consumed. These costs are allocated to customer classes in a variety of ways as described below.

Capacity Costs – Source of Supply

Q. Please describe how source of supply costs are allocated to customer classes.

A. Source of Supply costs not included in the variable cost section described above are allocated to customer classes using a methodology known as the Base/Extra capacity method.

Q. Please describe the Base/Extra capacity method.

A. The Base/Extra capacity method is explained in detail in the AWWA M1 Manual. It is generally accepted as a sound method for allocating the cost of water service to customer classes and was used by the Company in previous rate cases. In short, the Base/Extra capacity methodology relies upon a combination of the average water consumption across the year for each customer class and each class's estimated maximum daily consumption for the year to allocate the fixed costs of the water production and distribution system to customer classes. The Base/Extra capacity allocator is a two-part allocator, the first part being the "Base" component and the second part being the "Extra" component.

The Base component for each class is simply the average daily consumption for the year (total annual sales divided by 365 days). For each class, the "Base" allocation component is each class's average consumption divided by the total sum of average consumption for all classes. The "Extra" component is the difference between the estimated maximum daily consumption for a given class and the average daily consumption for that class. For each class, the "Extra" allocator is each class's extra demand value divided by the total sum of the extra demand values for all customer classes.

For each such class, the Base/Extra allocator is calculated as a weighted average of the Base and Extra allocators. The Base component is weighted by the total system load

factor expressed as a percentage (average daily system production divided by maximum day production), and the Extra component is weighted by one minus the system load factor.

Q. Please describe how the maximum daily consumption values for each class were estimated.

A. Maximum daily consumption values and peaking factors for each customer class are estimated based on daily and hourly consumption data collected through advance metering infrastructure ("AMI") data from Missouri-American Water Company's St. Louis County service territory. These samples, which are selected by customer class and subgroups within each class, are chosen such that the customers in each customer class sample have monthly usage characteristics that are nearly identical to monthly usage characteristics that KAWC customers have and are expected to have during the forecast period, thus providing consistency between the usage characteristics of the customers in each sample and the usage characteristics of KAWC customers in total.

Capacity Costs – Water Pumping Costs

Q. Please describe how water pumping costs are allocated to customer classes.

A. Similar to Source of Supply expenses, water pumping costs not included in the variable cost section described above are allocated to customer classes based on the Base/Extra capacity methodology. Unlike source of supply costs, water pumping costs are also allocated to fire service customers. The methodology for determining fire service requirements for the purposes of cost allocation is described later in my testimony.

Capacity Costs – Water Treatment Costs

Q. Please describe how water treatment costs are allocated to customer classes.

A. Water treatment costs not included in the variable cost section described above are allocated to customer classes based on the Base/Extra capacity methodology.

Capacity Costs – Transmission Costs

Q. How does the Company distinguish between transmission mains and distribution mains?

A. Generally, for cost allocation purposes, mains 10 inches and larger are classified as serving a transmission function and mains smaller than 10 inches are classified as serving a distribution function.

Q. Are transmission mains costs allocated to all customer groups?

A. Yes. All customer groups are considered to take service from the Company's transmission system and therefore transmission costs are allocated to all customer classes, including fire service.

Q. Please describe how costs associated with transmission mains are allocated to customer classes.

A. Costs associated with transmission mains are allocated to each customer class based on the Base/Extra capacity method with fire service included.

Capacity Costs – Distribution Costs

Q. Are distribution costs allocated to all customer groups?

A. No. It is often the case that for large industrial, other public authority, and sales for resale customers, service is taken directly from the transmission system (10 inches and above) and therefore it would not be appropriate to allocate costs related to the smaller diameter distribution system to these customers. For each customer class, a calculation is done to estimate the percentage of water sales served to that class directly from the transmission

system. The portion of sales in each class that is estimated to be served directly from the transmission system is not subject to an allocation of distribution costs. It is only the distribution-level sales in each class that are allocated distribution-related costs, and that relative level of sales is different for different customer classes.

Q. Please describe how costs associated with distribution mains are allocated to customer classes.

A. After removing usage served at the transmission level, costs associated with distribution mains are allocated to customer classes based on the previously defined Base/Extra capacity method that is modified to include a component that recognizes maximum hourly demand (at the distribution level) instead of maximum daily demand. This is appropriate because the transmission main system functions as a conduit from production facilities to the distribution system and is sized to accommodate aggregated water demands from customers that take service at the distribution level. Sizing at the distribution level needs to accommodate higher demands for shorter periods of time for smaller groups of customers whose demands have less diversity than aggregated demands at the transmission level. It is therefore appropriate to consider maximum hourly consumption requirements for distribution mains allocation, as opposed to maximum daily requirements.

Q. Aside from the differences between maximum hourly consumption and maximum daily consumption, does the Base/Extra allocator work the same way as you have previously described?

A. Yes. In this case, the Base component for each class is the average hourly consumption for the year (total annual sales divided by 8,760 hours). The “Extra” component is calculated as the difference between the maximum hourly consumption for a given class and the

average hourly consumption for that class. For each class, the Base/Extra allocator is calculated as a weighted average of the Base and Extra allocators. The Base component is weighted by the total system load factor expressed as a percentage defined this time as average hourly system consumption divided by estimated maximum hourly system consumption, and the Extra component is weighted by one minus the system load factor.

Q. Please describe how the maximum hourly consumption values are calculated.

A. The process for estimating maximum hourly consumption values by class is similar to the process used to estimate maximum daily consumption values by customer class. Maximum hourly consumption values for each customer class are estimated from the same samples used to estimate maximum daily consumption to ensure that there is consistency in usage patterns.

Capacity Costs – Storage Costs

Q. Please describe how the Company allocates the revenue requirements associated with storage costs to customer classes.

A. Storage costs are allocated to customer classes based on the Base/Extra allocator using hourly estimated peak demand for the extra component, like the allocator used to allocate distribution mains costs. For the storage allocator, it is assumed that all fire service capacity requirements are served first from the Company's storage capacity, and the remaining capacity is allocated to non-fire service classes using the Base/Extra hourly allocator.

Customer-Related Costs – Metering Costs

Q. Please describe how the Company allocates the revenue requirements associated with metering costs to customer classes.

A. Metering costs are allocated to customer classes based on a weighted number of customers calculation. Meter equivalent weightings in each class are based on AWWA standard meter equivalents by meter size.

Customer-Related Costs – Service Line Costs

Q. Please describe how the Company allocates the revenue requirements associated with service line costs to customer classes.

A. Service line costs are allocated to customer classes based on a weighted number of customers calculation like that for metering costs. Service line size weightings are the same as those used in the prior KAWC water service rate case.

Customer-Related Costs – Customer Service Costs

Q. Please describe how the Company allocates the revenue requirements associated with customer service costs to customer classes.

A. Customer service costs are allocated to customer classes based on the total number of customers in each class.

Fire Service Costs

Q. How is fire service maximum day usage considered in the Company's cost of service analysis?

A. Fire service maximum day usage requirements are determined through a combination of information on firefighting requirements provided by the American Insurance Association. This information relates firefighting requirements in terms of maximum gallons per minute and the duration of time those requirements are needed to general population levels. Given the population of the KAWC service territory, a firefighting demand of 14,000 gallons per minute for 10 hours was used in the Company's cost of service analysis. This firefighting

demand was split between private fire and public fire customer groups based on the relative potential water demand for each class, which is in turn based on the number and size of service lines and hydrants in each class.

Q. How is the fire service requirement used in the Company's cost of service study?

A. The fire service requirement is used as an add-on level of demand to the maximum daily and hourly demands for the other customer classes in the study and it is used in the Base/Extra allocation of capacity costs for water pumping, transmission, distribution, and storage costs.

Q. How is the revenue requirement for hydrants allocated to customer classes?

A. Hydrant costs are allocated to customer classes based on the total number of hydrants in each class.

Other Allocation Factors

Q. How are Administrative and General ("A&G") costs and cash working capital costs allocated to cost categories and customer classes?

A. A&G costs are generally allocated to cost categories and customer classes on the same basis that direct costs were allocated. For most A&G expenses, costs are allocated the same way that non-A&G direct O&M costs are allocated. A&G costs that are associated with employee costs, however, are allocated directly based on labor expenses. A&G costs that are associated with customer service are directly assigned to the customer service cost category. Cash working capital is allocated based on total O&M expense.

Q. How are depreciation costs allocated to cost categories and customer classes?

A. Annual depreciation accruals are allocated based on the function of the facilities represented by the depreciation expense for each depreciable plant account. The original

cost less depreciation of utility plant in service was similarly allocated for the purpose of developing factors for allocating items such as income taxes and operating income. These factors are based on the result of allocating other costs and are computed internally in the cost allocation model.

Q. How are income taxes and other operating income requirements allocated to cost categories and customer classes?

A. Income taxes and operating income requirements are allocated to cost categories and customer classes based on the amount of total rate base allocated to each customer class which is largely made up of net plant items described, but also contain adjustments to rate base such as accumulated deferred income taxes.

Q. Please summarize the results of the Company's cost of service analysis.

A. The following table provides a summary of the Company's cost of service analysis and shows total current revenues, cost of service, and the difference between the two by customer class:

TABLE 1 ***Customer Class***	**Revenue at Present Rates**	**Cost of Service**	**Difference**
Residential	$74,139,678	$77,457,275	4.5%
Commercial	$35,279,904	$39,693,592	12.5%
Industrial	$3,324,989	$4,402,340	32.4%
Other Public Authority	$8,983,234	$11,883,679	32.3%
Sales for Resale	$1,881,729	$3,443,132	83.0%
Public Fire	$5,687,531	$16,810,345	195.6%
Private Fire	$4,862,671	$7,207,362	48.2%
Miscellaneous	$144,793	$163,358	12.8%
Total	$134,304,528	$161,061,083	19.9%

III. RATE DESIGN

Q. Please describe the Company's rate design for water service.

A. The Company's rate design for water service features monthly meter charges that are differentiated by meter size and apply uniformly to all customers groups, and a volumetric

rate design with separate volumetric rates for each customer class. The current meter charges and volumetric rates are shown in the tables below:

TABLE 2

Monthly Meter Charges	**Meter Charge**
5/8" Meter	$17.55
¾" Meter	$26.20
1" Meter	$43.60
1 ½" Meter	$87.30
2" Meter	$139.70
3" Meter	$261.90
4" Meter	$436.60
6" Meter	$873.00
8" Meter	$1,396.80

TABLE 3

Volumetric Charges	**Volumetric Rate**
Residential	$6.7291
Commercial	$6.0875
Industrial	$5.0324
Public Authorities	$5.6070
Sales for Resale	$4.9527
Bulk	$4.0000

Q. Does the Company provide fire service rates?

A. Yes. The Company provides fire service rates for both private and public fire service. Private fire service rates are monthly charges that are differentiated by service line size and provides for fees for private fire hydrants and fees for usage under the Company's commercial meter service charges and volumetric charges. The Company also provides rates for public fire service which are charged on a monthly flat fee basis per hydrant.

Q. Does the Company have any customers under contract rates?

A. Yes. The Company has two customers on contract rates and those rates are not subject to change as a result of any revenue increases resulting from this proceeding.

Q. Is the Company including any acquisitions in rate design in this proceeding?

A. No, it is not.

Q. Is the Company proposing any changes to its water service rate design?

A. No. The Company is not proposing any changes to its rate design.

Q. Is the Company proposing to change monthly meter charges in this proceeding?

A. Yes. the Company is proposing to increase the 5/8" monthly meter charge to $19.45 per month, which is approximately a 11% increase over the current monthly meter charge of $17.55. The Company is proposing to increase meter charges for larger size meters by approximately the same percentage.

Q. Please describe how the Company is proposing to change volumetric rates in this proceeding.

A. The Company is proposing in this case to adjust volumetric rates for each customer class to better align them with their respective class cost of service. No class revenue increase, expressed as a percentage, is being proposed to exceed 125% of the overall revenue increase percentage. For customer classes where proposed revenues are above their class cost of service, the revenue increase percentages are below the overall revenue increase percentage.

Q. Please describe how the Company is proposing to change private and public fire rates in this proceeding.

A. The Company is proposing in this case to increase private and public fire charges in a manner that moves each class towards their respective class cost of service, with the revenue increases, expressed as percentages, not exceeding 125% of the overall revenue increase percentage.

Q. Do you have a table that provides the Company's complete proposed rate design for water service in this case?

A. The table below provides present rate and proposed rates for the Company's proposed revenue requirement in this case.

TABLE 4 *Monthly Meter Charges*	Current Meter Charge	Proposed Meter Charge	Percent Increase
5/8" Meter	$17.55	$19.45	11%
¾" Meter	$26.20	$29.00	11%
1" Meter	$43.60	$48.30	11%
1 ½" Meter	$87.30	$96.80	11%
2" Meter	$139.70	$154.80	11%
3" Meter	$261.90	$290.30	11%
4" Meter	$436.60	$483.90	11%
6" Meter	$873.00	$967.50	11%
8" Meter	$1,396.80	$1,548.00	11%

TABLE 5 *Volumetric Charges*	Current Volumetric Rate	Proposed Volumetric Rate	Percent Increase
Residential	$6.7291	$9.4567	41%
Commercial	$6.0875	$8.1129	33%
Industrial	$5.0324	$6.8779	37%
Public Authorities	$5.6070	$7.8187	39%
Sales for Resale	$4.9527	$6.9266	40%
Bulk	$4.0000	$6.1736	54%

IV. ANALYSIS OF KAWC CUSTOMER USAGE

A. Introduction

Q. Are there usage and revenue forecasts that the Company is proposing in this case that require a quantitative analysis of water consumption by KAWC's customers?

A. Yes. I will explain the modeling used to develop the revenue forecasts for the residential and commercial classes, and thereafter, I will discuss the development of the revenue projections for all customer classes (residential, commercial, industrial, public authorities,

and sales for resale). For residential and commercial customers, the Company is modeling historical monthly usage per customer from January 2015 through December 2024 to forecast monthly usage per customer for the period January 2025 through December 2029 taking into account usage trends, weather normalization, and the impact of the COVID-19 public health emergency on water consumption for KAWC's water service customers. These adjustments for usage trends, weather, and COVID-19 require the Company to analyze water consumption and determine (1) if there is a significant and pervasive rate of decline in water use per customer over time, (2) if there are significant relationships between water consumption and weather conditions in the Company's service territory, and (3) if the COVID-19 public health emergency has had a significant impact on water consumption for KAWC's customers to determine if a COVID-related adjustment to usage is appropriate in months where usage may have been affected by the pandemic.

B. Statistical Modeling

Q. What is a statistical linear regression model?

A. Statistical linear regression modeling is a commonly used type of mathematical predictive analysis. The purpose of regression modeling is to examine two things: (1) analysis of a set of independent explanatory variables on their effectiveness of predicting an outcome (dependent) variable, and (2) identification of independent explanatory variables that are significant predictors of the dependent variable.

There are three major uses for statistical linear regression analysis: (1) determining the predictive power of independent explanatory variables; (2) forecasting the effect that independent variables have on a dependent variable; and (3) trend forecasting. First, the regression analysis can be used to identify the strength of the effect that independent

explanatory variables have on a dependent variable. A typical question is: "What is the strength of the relationship between summer heat, precipitation, and water sales?" Second, the regression analysis can be used to forecast the effects or impacts of changes. That is, the regression analysis helps us understand how much the dependent variable changes with a change in one or more of the independent variables. A typical question is: "How much water sales can the Company expect to lose for each inch of rainfall above normal in any given period?" Third, regression analysis can predict trends and future values. The regression analysis can be used to get point estimates of future values of the dependent variable based on assumed values for the independent variables. A typical question can be: "Given current trends in water sales, what can we expect water sales to be each month next year assuming normal weather?"

Q. What does a statistical linear regression model produce?

A. A statistical linear regression analysis is a way of mathematically validating which independent variables have a significant impact on the dependent variable – the main factor, the one you are trying to better understand or predict. A statistical linear regression model produces an equation that describes a historical relationship between a set of independent variables and a single dependent variable that can be used to forecast future values of the dependent variable based on assumed values of the independent variables. An example of such an equation is shown below:

$$UPCn = a0 + (a1 \times RAINn) + (a2 \times CDDn) + (a3 \times HDDn) + (a4 \times COVID\text{-}19n) + (a5 \times TIMEn)$$

Where: UPCn = Use per customer in month n

RAINn = Rainfall in month n

CDDn = Cooling Degree Days ("CDD") in month n

HDDn = Heating Degree Days ("HDD") in month n

COVIDn = COVID-19 effect in month n (0% to 100%)

TIMEn = Year/Month for month n

and: a0 = constant term

a1 = coefficient for RAIN

a2 = coefficient for CDD

a3 = coefficient for HDD

a4 = coefficient for COVID-19 impact per customer

a5 = coefficient for TIME (usage trend value)

In this example, use per customer is the dependent variable (outcome) and all other variables are independent variables (predictors).

Q. Can statistical linear regression models be used to weather normalize historical water sales for different customer classes?

A. Yes. In the statistical model in the example above, the a1 coefficient for RAIN can be used to estimate the impact of rainfall on use per customer in any given historical period and estimate the impact of what use per customer would have been if rainfall had been different, especially when actual precipitation was higher or lower than normal. Below is a sample calculation of how weather normalization works with a statistical regression model that uses the weather as a strong predictive independent variable that affects the use per customer dependent variable.

IMPACTn = a1 x (ACTUAL RAINn – NORMAL RAINn)

Where: IMPACTn = Weather impact due to abnormal rainfall in period n

ACTUAL RAINn = Actual Rainfall (in inches) in period n

NORMAL RAINn = Average Rainfall (in inches) in period n

If the value of the a1 coefficient for rainfall is -0.30 in this example, actual rainfall for the period is 6 inches and normal rainfall for the period is 4 inches, the weather impact for the period due to higher-than-normal rainfall is a negative 600 gallons per customer meaning that the Company sold 600 fewer gallons per customer of water than it otherwise would have [-0.30 x (6 – 4) = -0.60]. If there are multiple weather variables in the statistical regression analysis, this calculation is completed separately for each variable and the sum of the calculations is rolled up into a single weather impact. This approach to weather normalization allows an analyst to independently assess the impact of each weather component, and also allows an analyst to state the weather impacts over time both in terms of consumption and in terms of revenues by multiplying the consumption impact by a volumetric price.

Q. Can statistical linear regression models be used to estimate the impacts of COVID-19 on water sales for different customer classes?

A. Yes. In the statistical model example above, the a4 coefficient for COVID-19 is the estimate of the impact of the COVID-19 public health emergency on monthly use per customer. The historical data set contains a variable for each month that indicates the assumed qualitative level impact of COVID-19 in that month. In all months prior to April 2020, that value was set at 0%. From April 2020 through December 2020, that value is set at 100% when maximum COVID-19 impacts are observed or can be set at a level less than 100% where we see reduced COVID-19 impacts on usage. The coefficient for the COVID-19 impact variable estimates the average monthly use per customer based on the months

that have been designated as COVID-19 months. This coefficient can then be used to (1) identify a normal level of usage that is not influenced by the impact of COVID-19, in a manner similar to a normalization calculation that adjusts for the influence on water usage associated with weather conditions that depart from normal, and (2) reflect estimates of future impacts of the COVID-19 public health emergency.

Q. Can these models be used to estimate trends in usage per customer for different customer classes?

A. Yes. In the same statistical model example represented above, the a5 coefficient for TIME is the estimate of inclining or declining use per customer per month. This coefficient measures the rate of incline/decline in use per customer over the historical data set independent of the effect of any other variable in the model. The historical data set contains a variable for each month which is a timestamp that starts at 1 for the first month in the dataset and increases by 1 for every month going forward. This acts as a trend variable for both historical periods in the dataset and future forecast periods. The coefficient for this trend variable is applied to future increasing values of the trend which results in decreasing forecasts of use per customer.

Q. How does one assess the accuracy of a statistical linear regression model?

A. A statistical linear regression model produces a set of statistics that can be used to judge the accuracy and fitness of the model. For example, some common statistics are (1) the "R-Squared" value, which is a statistical measure in a regression model that determines the proportion of variance in the dependent variable that can be explained by the independent variables, and (2) regression coefficients and standard errors, which can be used to determine "t-statistics" and "p-values" which tell how accurately and precisely the different

coefficients are being calculated and whether the associated independent variables are strong predictors of the dependent variable.

In the equation described above, the "R-Squared" value is a statistic that measures the percentage of variation in the dependent variable (water use per customer) that is explained by the mathematical relationship with the independent variables. The R-Squared can range from 0% (no explanatory ability) to 100% (perfect explanatory accuracy). In general, a higher R-squared suggests a stronger predictive power of the model.

The second major test involves comparisons of the values of each of the model coefficients and their associated standard errors. Because a statistical regression model estimates an explanatory relationship between a dependent variable and a set of independent variables, there will always be some degree of uncertainty around what that explanatory relationship actually is. As a result, each model coefficient has a level of uncertainty around it, and this level of uncertainty is represented by calculating standard errors for each coefficient.

Dividing the value of each coefficient by its standard error yields a t-statistic which can be used to judge the predictive power of the independent variable that the coefficient represents. For example, in the case of the generic statistical model described above, if the value of the a1 coefficient for rainfall is -0.30 and the standard error for that coefficient is 0.05 (meaning that the real value of the coefficient could be anywhere between -0.35 and -0.25 with -0.30 being the most likely value), the value of the t-statistic is -6.0 (-0.30 divided by 0.05 = 6.0). Generally speaking, t-statistic values greater than 2.0 for positive coefficients or less than -2.0 for negative coefficients indicate an acceptable predictive relationship between that independent variable and the dependent variable of interest. The

higher the t-statistic value, the greater the confidence we have in the coefficient as a predictor. Values between 2.0 and -2.0 indicate that the predictive power of that independent variable may not be very strong.

Q. Are there other more qualitative ways to determine whether a statistical linear regression model is accurate and produces reasonable results?

A. Yes. There are also several qualitative ways to determine whether a statistical regression model accurately describes the relationship that a chosen set of independent variables has with the dependent variable:

- **Does the model represent reality?** If it is generally known that water consumption is seasonal and is driven in the summertime by heat and precipitation, it is logical to assume that a statistical model that attempts to describe and predict seasonal water consumption would have explanatory variables related to summer heat and precipitation, and those explanatory variables would be shown to have a strong predictive value in the model. Models that attempt to accurately describe the drivers behind water consumption that do not contain statistically significant coefficients for independent variables that are logically known to drive water consumption are likely not strong predictive models.
- **Are the signs of the coefficients for major independent variables correct?** If water consumption increases in the summertime with increasing heat and decreases in the summertime with increasing precipitation, it is logical to expect that the coefficients for the independent variables that represent summertime heat and summertime precipitation would be positive and negative, respectively.

- **Is the model based on a robust data set?** It is easy for a statistical model with many independent variables and relatively few observations of the dependent variable to accurately explain variation in the dependent variable, but that does not mean that the model has strong predictive power if the data set being analyzed is small in scope. A statistical model that attempts to describe water consumption that has good predictive explanatory power over multiple years of monthly historical data is very useful and accurate in projecting future trends and in explaining how changes in strong predictive independent variables will affect levels of the dependent variable.
- **Do the impacts on the dependent variable that the model describes make logical sense?** It is possible outside of a statistical linear regression model to make ballpark estimates of other facts like the impact of COVID-19 on water consumption and long-term trends in inclining or declining use. This can be done with a simple linear plot of annual usage data by year. For example, if a linear plot of annual usage data suggests that there is a downward trend of approximately 1,000 gallons per customer per year, one would expect that a statistical model that is measuring that impact would yield a result that is similar. The same is true when looking at the potential impacts of COVID-19 on water consumption. If a visual examination of data suggests that water use per customer for a commercial class has decreased by 2,000 gallons per customer in 2020 due to the COVID-19 emergency, it is logical to expect a statistical regression model that attempts to statistically measure that impact to yield estimates consistent with that expectation.

C. KAWC Specific Information

Q. Please describe the statistical linear regression model you are using to analyze water consumption data for KAWC.

A. In this proceeding, we are using multiple regression statistical models to analyze use per customer for the residential and commercial classes that relate the dependent variable (i.e., water use per customer) to a collection of independent variables. The models use 120 months of monthly data beginning in January 2015 through December 2024. Each regression model uses independent variables that can be broken down into four categories to explain monthly use per customer. The four categories are:

- **Weather**: The weather variables used in the models are Cooling Degree Days ("CDDs") and Heating Degree Days ("HDD"). These weather variables are a weighted average of current month and lagged month weather readings taken by the National Oceanic and Atmospheric Administration at Lexington Bluegrass Airport. This weighted average lagged approach is used to account for the differences between billing month sales and calendar month weather. Coefficients from these variables show the impact of weather on monthly use per customer over the 10-year period. Weather variables are modeled as monthly deviations from normal for each month in the data set (actual weather for the month less normal weather for the month for each individual weather variable). Normal weather is calculated for each month of the year based on the weather over the ten-year period that the historical data spans.
- **Time**: The time variable is a trending variable that notes the passage of time in the model and produces a coefficient that estimates the monthly decline in usage per

customer over the 10-year model. The time variable captures the range of conservation efforts that have been implemented by customers over time, such as the installation of more water-efficient fixtures and appliances. Time on its own is of no consequence, but it is a powerful variable because it is the medium for capturing the conservation effect.

- **COVID-19 indicator**: The COVID-19 indicator variable is set at 0% for months prior to April 2020 and 100% for the months of April 2020 through December 2020. The effect of this variable in the model is to look specifically for increases or decreases in use per customer for the April 2020 through December 2020 timeframe that may have happened due to systemic changes in the amounts of water customers use as a result of the COVID-19 public health emergency.
- **Monthly indicators**: The monthly indicator variables in the model measure structural monthly and/or seasonal changes in use per customer that cannot be explained by any of the other variables in the model.

Q. You mentioned that you have developed models for customer usage relating to the residential and commercial classes. Are you also modeling usage for the industrial, OPA, Sales for Resale customer classes, and for fire service classes?

A. No. The statistical modeling in this case is only for the residential and commercial classes. Usage estimates for the industrial, sales for resale, and OPA classes are developed using a simple multi-year average and are described later in the revenue section of my testimony.

Q. You previously discussed the various statistical tests used for accuracy and predictability. Please discuss the results of these tests for your models and why they are appropriate to use in this proceeding.

A. As shown in Exhibit MWM-1, the values of the coefficients, standard errors, and t-statistics for the major explanatory variables in the models are as follows:

TABLE 6
Residential Model Major Explanatory Variables

	Coefficient	Standard Error	T-Statistic
Usage Trend	-0.0017	0.0007	-2.5930
Precipitation	-0.0525	0.0132	-3.9708
CDD	0.0022	0.0006	3.6401
COVID-19 Impact	0.1909	0.0880	2.1705

TABLE 7
Commercial Model Major Explanatory Variables

	Coefficient	Standard Error	T-Statistic
Usage Trend	-0.0021	0.0053	-0.3963
Precipitation	-0.4846	0.1295	-3.7425
CDD	0.0156	0.0049	3.1769
COVID-19 Impact	-2.9570	0.7147	-4.1377

The statistics for the individual explanatory independent variables above show a high degree of explanatory power with all parameters having t-statistics all outside of the +/- 2.00 range with the exception of the usage trend variable for commercial customers. The sign for the precipitation variable is negative as expected, meaning that more rainfall over a summer period results in less seasonal water usage from our residential customers. The sign for the CDD variable is positive, which indicates that the hotter the weather gets in the summer, customers use more water, which is expected, and the COVID-19 impact variable indicates that residential usage went up as a result of COVID-19. The sign for the residential usage trend variable is negative and is statistically significant which means that

there is a pervasive decline in use per customer for residential customers over the ten-year historical period.

Q. Your regression models show a trend of declining use per customer. What is the amount of declining use your models have identified?

A. The annual amount of declining use identified for residential customers is approximately 200 gallons per year per customer. The annual amount of declining use identified for commercial customers is approximately 300 gallons per year per customer.

D. Continuing Trends

Q. Why do you believe that a declining usage trend is a valid trend for residential customers that will continue?

A. Consumption patterns for the Company's customers are similar to those for other American Water operating companies which have experienced a decline in residential consumption per customer over the last 10 years. According to the 2010 Water Research Foundation report, "many water utilities across the United States and elsewhere are experiencing declining water sales among households." The report further states: "A pervasive decline in household consumption has been determined at the national and regional levels."[1]

Q. What is causing the decline in residential customers' usage?

A. Several factors drive the decline in residential customers' usage. These factors include the incremental introduction of low-flow fixtures and appliances, new regulations that lead to

[1] Coomes, Paul et al., North America Residential Water Usage Trends Since 1992 – Project #4031, page 1 (Water Research Foundation, 2010).

further reductions in fixture flow rates, conservation programs, and public initiatives that have led to greater consumer water conservation awareness.

Plumbing fixtures such as toilets, showerheads, and faucets available to consumers today are more water-efficient than those fixtures manufactured in the past. Similarly, appliances such as dishwashers and washing machines are also more water efficient. When a customer replaces an older toilet, washing machine, or dishwasher with a new unit, the new unit will almost certainly use less water than the one it replaced. Similarly, the construction of new homes results in the installation of water-efficient fixtures meeting new, more efficient, regulatory standards.

Q. How much water do the new fixtures and appliances save?

A. The Energy Policy Act of 1992 mandated the manufacture of water-efficient toilets, showerheads, and faucet fixtures. For example, a toilet manufactured after 1994 must use no more than 1.6 gallons per flush, compared to a pre-1994 toilet, which typically used from 3.5 to 7 gallons per flush. In fact, toilets using only 1.28 gallons per flush or less are becoming more prevalent in the marketplace. Replacing an old toilet with a new one, therefore, can save from 2 to nearly 6 gallons per flush. The United States Environmental Protection Agency estimates that there are more than 220 million toilets in the United States and that approximately 10 million new toilets are sold each year for installation in new homes and businesses or replacement of aging fixtures in existing homes and businesses.

The Energy Independence & Security Act of 2007, which established stringent efficiency standards for dishwashers and washing machines, has further reduced indoor water consumption. Dishwashers manufactured after 2009 and washing machines

manufactured after 2010 must use 54% and 30% less water, respectively. All other factors being equal, a typical residential household in a new home constructed in 2015, with water-efficient toilets, washing machines, dishwashers, and other fixtures, uses approximately 35% less water for indoor purposes than a non-retrofitted home built prior to 1994.

Q. Are there other factors contributing to the continued decline in water consumption patterns?

A. Yes. Programs to raise customer awareness and interest in the benefits of conserving water and energy continue to increase. As awareness of water and energy efficiency increases, customers may decide to replace a fixture or appliance even before it has broken. Additionally, customers may further reduce consumption by changing their household water use habits in other various ways.

Q. Do you expect the trend of declining usage to continue in the future?

A. Yes. Water-efficient fixtures and other drivers such as conservation education and government-mandated standards will continue to drive further efficiency into residential and nonresidential usage per customer. In fact, the trend is well established and continues to affect water usage on the Company's system as well as most water utilities across the United States. The rate of the continued trend is dependent on the pace of fixture replacement within the Company's footprint as well as the broadening acceptance of a conservation ethic through raised customer and business awareness programs, government conservation policy, and similar behavior modification-related programs.

Technology is now available for newer, more water-efficient products that further improve on Energy Policy Act levels, and there has been a growing movement to codify these more stringent specifications. The introduction of progressive code modifications –

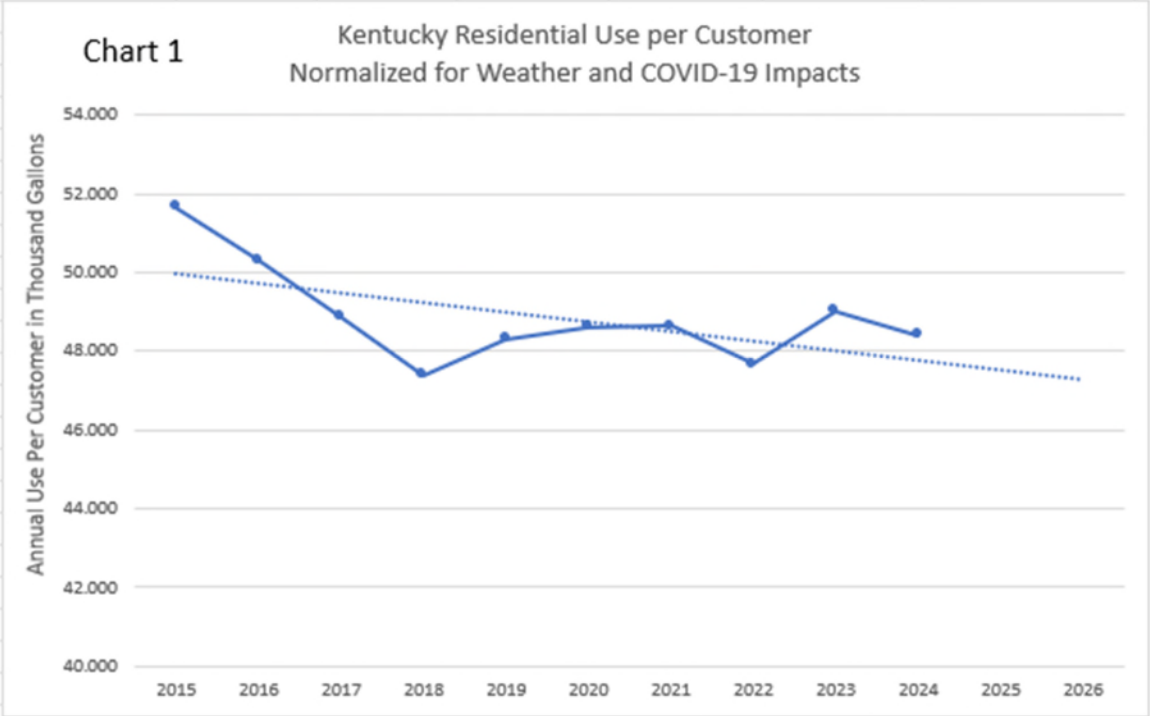
such as the International Code Council's International Green Construction Code and the International Association of Plumbing and Mechanical Officials Green Plumbing and Mechanical Code Supplement (2011) – support uniform implementation of increased water efficiency standards. An article in the June 2012 issue of the AWWA Journal entitled "Insights into declining single-family residential water demands" recognizes this decline in water consumption: "[r]educed residential demand is a cornerstone of future urban water resource management. Great progress has been made in the last 15 years and the industry appears poised to realize further demand reductions in the future."[2] The trend of declining water consumption based on improved water efficiency has continued over time.

E. Conclusion

Q. Normalizing historical usage for weather and the COVID-19 emergency, what has the overall trend been for use per customer for the residential class?

The statistical analysis of residential usage shows that once weather effects and the one-time effects of COVID-19 have been accounted for, there is a significant downward trend in usage for residential customers. The chart below shows use per customer for the residential class for the ten years ending December 2024, adjusted for the weather impacts and COVID-19 impacts I previously described in my testimony.

[2] DeOreo, William and Mayer, Peter. American Water Works Association Journal. Vol. 104. Issue 6. http://apps.awwa.org/WaterLibrary/showabstract.aspx?an=JAW_0076117. June 2012.



Q. What conclusions do you draw for residential usage per customer from this chart and your supporting analysis?

A. The chart and the supporting analysis demonstrate that there has been a significant and pervasive decline in normalized use per customer for residential customers in the KAWC service territory. The Company's modeling normalizes for weather and COVID-19 and shows that there is a pervasive decline in residential usage over the past ten years. The historical trends in adjusted monthly use per customer for the residential class will continue for the relevant time periods going forward.

Q. What conclusions do you draw for commercial usage per customer from your supporting analysis?

A. The commercial model's usage trend variable implies a decline in usage per customer for commercial customers in the KAWC service territory. However, the usage trend variable

does not have a t-statistic outside of the +/- 2.00 range indicating that the variable has low explanatory power. Therefore, the Company did not utilize the results of the statistical modeling to forecast volumetric consumption per customer for the commercial class.

V. REVENUE FORECAST AND ASSOCIATED CALCULATIONS

Q. Please generally describe the process of calculating and forecasting present rate revenues and proposed rate revenues in this case.

A. Present and proposed revenues in this proceeding are presented in Exhibit 37 and supported by the forecasted sales and customer counts provided in Exhibit 25 and 26. Present and proposed revenues by month are also provided in the file labeled Exhibits (25, 26, 37) Revenue WP Support. Revenue calculations are done for the Base Year, which is 12-months ended August 2025 consisting of six months of actuals through February 2025 and six months of projections through August 2025 and extending through the forecasted test period (12 months ended December 2026) and out through December 2029. Revenue and billing determinant projections are provided by month through 2029 in the Revenue WP Support workpapers.

Q. Please describe the process for calculating present rate revenue for the Residential customer class.

A. Residential present rate revenue was forecasted by establishing the relevant billing determinants during the forecasted test period, multiplying these by the present tariffed rate, and scaling up by the projected Qualified Infrastructure Program ("QIP") Rider percentage. Billing determinants were forecasted as follows:

- **Volumetric usage per customer**: Volumetric consumption per customer for the residential class was forecasted using the statistical modeling I described previously in my testimony.
- **Number of customers**: The Company started with customer counts as of February 2025. Average organic growth for the years 2022, 2023, and 2024 was used to project customer additions per month through the forecasted test year and out through December 2029.
- **Number of meter billings**: The Company used the actual bill analysis of meter counts for February 2025 to project meter counts going forward for the residential class. The relationship between meter counts and customer counts in February 2025 is used to project increases in meter counts as customer counts increase, which results in increased meter billing determinants for both classes in the forecasted periods.

Q. Please describe the process for calculating revenues for the remaining customer classes.

A. Present rate revenues for the remaining customer classes was forecasted by establishing the relevant billing determinants during the forecasted test period, multiplying these by the present tariffed rate, and scaling up by the projected Qualified Infrastructure Program ("QIP") Rider percentage. The process for forecasting billing determinants for the remaining customer classes is described below:

- **Commercial, Other Public Authorities and Miscellaneous:** For these classes, the Company uses a three-year average of use per customer for 2022, 2023, and 2024 and applies that average to customer counts and meter counts for February 2025.

For the Commercial class, the Company starts with customer counts as of February 2025. Average organic growth for the years 2022, 2023, and 2024 was used to project customer additions per month through the forecasted test year and out through December 2029. No customer growth is assumed going forward for the Other Public Authorities and Miscellaneous classes.

- **Industrial and Sales for Resale**: For these classes, the Company analyzed the actual historical usage of each customer individually, reviewing 2022, 2023, and 2024 data in order to forecast projected usage. Current meter counts as of February 2025 were used to forecast future meter billings.
- **Private Fire and Public Fire**: For these classes, the number of active fire hydrants and fire services was taken as of February 2025 and used for forecasting revenue. Growth in billing determinants is based on three-year average growth rates for 2022, 2023 and 2024 similar to customer growth calculations for the residential and commercial classes. Thirty-eight (38) additional public fire hydrants were included in May 2025 as the Company anticipates that these hydrants will meet the Commission's regulations on public fire safety at that time.

Q. Did you also compute the total estimated gallons of production that correspond to your revenue forecast and the system delivery amount used by Company witness Robert Prendergast for purposes of the system delivery adjustments that he proposes for water service?

A. Yes, I did. System deliveries are all of the water produced by KAWC and supplied into the distribution system. System deliveries are calculated by taking total billed water sales and

adjusting by the Company's targeted non-revenue water percentages.[3] I calculated the forecasted monthly system deliveries through December 2029 by scaling up monthly total sales using the projected non-revenue water percentages.

Q. Please describe the determination of proposed revenues for Miscellaneous Revenues.

A. The determination of Miscellaneous Revenues is as follows:

- Rent revenues are based on actual lease agreements in place as of 2025.
- Late Fees are based on the three-year average ratio of late payments to billed revenues applied to new forecast revenues.
- NSF revenues, Reconnect Fees, Application Fees, and Usage Data Fees are based on three-year average revenues from 2022, 2023, and 2024.
- Miscellaneous Service revenues ended July 2024 and represented the amortization of deferred billed revenue over a two-year period related to the closure of an industrial customer as approved by the Commission in Case No. 2018-00358. Therefore, Miscellaneous Service revenues are set to $0.00.

Q. How are proposed rate revenues determined?

A. Proposed rate revenue is the result of the forecasted test year billing determinants multiplied by the rates developed and presented in my direct testimony. When applied to the forecasted billing determinants, these prices yield proposed rate revenue equal to Kentucky-American's cost of providing water service, as documented in this proceeding.

Q. Are there QIP Rider revenues included in Proposed Revenues?

A. There are no QIP revenues included in Proposed Revenues. The Company is proposing that the QIP revenues are rolled into base rates and that the QIP percentage be reset to

[3] The non-revenue water percentage represents the share of total water produced not attributed to metered sales.

0.00% as a part of this rate case. Please see the testimony of Company witness Dominic DeGrazia for details.

Q. Are present and proposed rate revenues summarized on the exhibits and schedules you are sponsoring?

A. Yes. Both present and proposed rates are summarized on Exhibit 37 Schedule M and Exhibit 37 Schedule N.

- Schedule M summarizes billing determinants (such as meter billings and volumes of water at various block rates) and prices to calculate both present and proposed rate revenue. The schedule is shown for the total water operation and also by class.
- Schedule N provides a present and proposed rate bill comparison at various water consumption levels by class. Schedule N also shows the average bill, based on average water consumption for each class and the most common meter size for the class.

Q. Does this conclude your prepared direct testimony?

A. Yes, it does.

VERIFICATION

STATE OF NORTH CAROLINA)
) SS:
COUNTY OF CHATHAM)

The undersigned, Max McClellan, being duly sworn, deposes and says that he is a Principal Regulatory Analyst for American Water Works Service Company, Inc., that he has personal knowledge of the matters set forth in the accompanying testimony for which he is identified as the responsible witness, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.

Max McClellan

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 6th day of May, 2025.

Notary Public

My Commission Expires:

04-20-2027

ANDREW KUTNER
Notary Public - North Carolina
Wake County
My Commission Expires Apr 20, 2027

Kentucky American Water Company
Residential

																		Rain Lag 2	0.0	CDD Lag						
																		Rain Lag 1	1.0	1.0						
						0.4835	-0.0869	-0.0351	0.0379	0.2755	0.8274	1.0713	1.1015	1.1315	0.8662	0.1700	-0.0017	-0.0525	0.0022	0.1909				Weather	Billing
Period	Obs	Year	Month	Cust	Sales	UPC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Trend	Rain (Diff)	CDD (Diff)	COVID	Predicted	Actual	Variance	Effect	Adjustments
1	85	2015	1	114,636	496,999	4.335	1	0	0	0	0	0	0	0	0	0	0	-119	0	0	0	4.172	4.335	-0.163	0.000	0
1	86	2015	2	114,766	409,081	3.564	0	1	0	0	0	0	0	0	0	0	0	-118	0	0	0	3.600	3.564	0.035	0.000	0
1	87	2015	3	115,014	472,025	4.104	0	0	1	0	0	0	0	0	0	0	0	-117	0	0	0	3.650	4.104	-0.454	0.000	0
1	88	2015	4	115,157	461,866	4.011	0	0	0	1	0	0	0	0	0	0	0	-116	3	-2	0	3.555	4.011	-0.456	-0.166	0
1	89	2015	5	115,174	444,309	3.858	0	0	0	0	1	0	0	0	0	0	0	-115	7	-14	0	3.556	3.858	-0.301	-0.401	0
1	90	2015	6	115,527	563,334	4.876	0	0	0	0	0	1	0	0	0	0	0	-114	-3	22	0	4.698	4.876	-0.178	0.191	0
1	91	2015	7	115,691	513,500	4.439	0	0	0	0	0	0	1	0	0	0	0	-113	1	10	0	4.735	4.439	0.297	-0.014	0
1	92	2015	8	115,882	518,053	4.471	0	0	0	0	0	0	0	1	0	0	0	-112	4	-51	0	4.436	4.471	-0.035	-0.342	0
1	93	2015	9	116,068	574,523	4.950	0	0	0	0	0	0	0	0	1	0	0	-111	-2	-87	0	4.721	4.950	-0.229	-0.085	0
1	94	2015	10	116,091	541,831	4.667	0	0	0	0	0	0	0	0	0	1	0	-110	-1	-14	0	4.548	4.667	-0.120	0.008	0
1	95	2015	11	116,144	425,337	3.662	0	0	0	0	0	0	0	0	0	0	1	-109	-1	-34	0	3.794	3.662	0.132	-0.048	0
1	96	2015	12	116,165	450,092	3.875	0	0	0	0	0	0	0	0	0	0	0	-108	0	0	0	3.670	3.875	-0.205	0.000	0
2	97	2016	1	116,124	438,318	3.775	1	0	0	0	0	0	0	0	0	0	0	-107	0	0	0	4.152	3.775	0.377	0.000	0
2	98	2016	2	116,263	430,536	3.703	0	1	0	0	0	0	0	0	0	0	0	-106	0	0	0	3.580	3.703	-0.124	0.000	0
2	99	2016	3	116,397	431,088	3.704	0	0	1	0	0	0	0	0	0	0	0	-105	0	0	0	3.630	3.704	-0.074	0.000	0
2	100	2016	4	116,599	464,312	3.982	0	0	0	1	0	0	0	0	0	0	0	-104	-2	0	0	3.783	3.982	-0.199	0.082	0
2	101	2016	5	116,819	436,240	3.734	0	0	0	0	1	0	0	0	0	0	0	-103	-1	-1	0	3.990	3.734	0.255	0.053	0
2	102	2016	6	116,944	543,599	4.648	0	0	0	0	0	1	0	0	0	0	0	-102	2	-50	0	4.289	4.648	-0.359	-0.198	0
2	103	2016	7	116,893	556,625	4.762	0	0	0	0	0	0	1	0	0	0	0	-101	0	35	0	4.827	4.762	0.065	0.097	0
2	104	2016	8	117,139	565,559	4.828	0	0	0	0	0	0	0	1	0	0	0	-100	0	20	0	4.815	4.828	-0.013	0.057	0
2	105	2016	9	117,276	566,648	4.832	0	0	0	0	0	0	0	0	1	0	0	-99	2	90	0	4.863	4.832	0.031	0.077	0
2	106	2016	10	117,385	549,271	4.679	0	0	0	0	0	0	0	0	0	1	0	-98	-2	58	0	4.741	4.679	0.062	0.222	0
2	107	2016	11	117,324	501,169	4.272	0	0	0	0	0	0	0	0	0	0	1	-97	-3	25	0	4.041	4.272	-0.231	0.220	0
2	108	2016	12	117,366	471,584	4.018	0	0	0	0	0	0	0	0	0	0	0	-96	0	0	0	3.650	4.018	-0.369	0.000	0
3	109	2017	1	117,337	467,875	3.987	1	0	0	0	0	0	0	0	0	0	0	-95	0	0	0	4.131	3.987	0.144	0.000	0
3	110	2017	2	117,359	421,264	3.590	0	1	0	0	0	0	0	0	0	0	0	-94	0	0	0	3.559	3.590	-0.030	0.000	0
3	111	2017	3	117,658	403,788	3.432	0	0	1	0	0	0	0	0	0	0	0	-93	0	0	0	3.609	3.432	0.177	0.000	0
3	112	2017	4	117,991	426,740	3.617	0	0	0	1	0	0	0	0	0	0	0	-92	-1	3	0	3.744	3.617	0.127	0.063	0
3	113	2017	5	118,171	464,428	3.930	0	0	0	0	1	0	0	0	0	0	0	-91	-2	37	0	4.129	3.930	0.199	0.213	0
3	114	2017	6	118,262	536,481	4.536	0	0	0	0	0	1	0	0	0	0	0	-90	1	-12	0	4.397	4.536	-0.139	-0.069	0
3	115	2017	7	118,218	535,084	4.526	0	0	0	0	0	0	1	0	0	0	0	-89	1	-35	0	4.588	4.526	0.062	-0.121	0
3	116	2017	8	118,378	541,171	4.572	0	0	0	0	0	0	0	1	0	0	0	-88	0	-13	0	4.711	4.572	0.139	-0.027	0
3	117	2017	9	118,437	552,157	4.662	0	0	0	0	0	0	0	0	1	0	0	-87	1	-85	0	4.534	4.662	-0.128	-0.232	0
3	118	2017	10	118,485	489,137	4.128	0	0	0	0	0	0	0	0	0	1	0	-86	0	-67	0	4.337	4.128	0.208	-0.162	0
3	119	2017	11	118,442	452,419	3.820	0	0	0	0	0	0	0	0	0	0	1	-85	2	4	0	3.716	3.820	-0.104	-0.085	0
3	120	2017	12	118,448	430,850	3.637	0	0	0	0	0	0	0	0	0	0	0	-84	0	0	0	3.629	3.637	-0.008	0.000	0
4	121	2018	1	118,548	504,760	4.258	1	0	0	0	0	0	0	0	0	0	0	-83	0	0	0	4.111	4.258	-0.147	0.000	0
4	122	2018	2	119,046	423,817	3.560	0	1	0	0	0	0	0	0	0	0	0	-82	0	0	0	3.539	3.560	-0.021	0.000	0
4	123	2018	3	119,170	398,240	3.342	0	0	1	0	0	0	0	0	0	0	0	-81	0	0	0	3.589	3.342	0.247	0.000	0
4	124	2018	4	119,359	422,111	3.536	0	0	0	1	0	0	0	0	0	0	0	-80	1	-2	0	3.606	3.536	0.070	-0.054	0
4	125	2018	5	119,414	457,844	3.834	0	0	0	0	1	0	0	0	0	0	0	-79	0	-18	0	3.857	3.834	0.023	-0.039	0
4	126	2018	6	119,452	547,569	4.584	0	0	0	0	0	1	0	0	0	0	0	-78	3	120	0	4.568	4.584	-0.016	0.122	0
4	127	2018	7	119,450	521,015	4.362	0	0	0	0	0	0	1	0	0	0	0	-77	-1	54	0	4.839	4.362	0.478	0.151	0
4	128	2018	8	119,617	529,667	4.428	0	0	0	0	0	0	0	1	0	0	0	-76	-1	-22	0	4.713	4.428	0.285	-0.004	0
4	129	2018	9	119,568	488,661	4.087	0	0	0	0	0	0	0	0	1	0	0	-75	1	14	0	4.724	4.087	0.637	-0.021	0
4	130	2018	10	119,588	500,289	4.183	0	0	0	0	0	0	0	0	0	1	0	-74	7	56	0	4.236	4.183	0.053	-0.242	0
4	131	2018	11	119,609	426,610	3.567	0	0	0	0	0	0	0	0	0	0	1	-73	3	72	0	3.762	3.567	0.195	-0.019	0
4	132	2018	12	119,500	425,196	3.558	0	0	0	0	0	0	0	0	0	0	0	-72	0	0	0	3.609	3.558	0.051	0.000	0
5	133	2019	1	119,738	468,191	3.910	1	0	0	0	0	0	0	0	0	0	0	-71	0	0	0	4.091	3.910	0.180	0.000	0
5	134	2019	2	120,022	436,030	3.633	0	1	0	0	0	0	0	0	0	0	0	-70	0	0	0	3.518	3.633	-0.114	0.000	0
5	135	2019	3	119,963	428,647	3.573	0	0	1	0	0	0	0	0	0	0	0	-69	0	0	0	3.569	3.573	-0.005	0.000	0
5	136	2019	4	120,545	410,551	3.406	0	0	0	1	0	0	0	0	0	0	0	-68	-1	0	0	3.718	3.406	0.312	0.078	0
5	137	2019	5	120,691	481,374	3.988	0	0	0	0	1	0	0	0	0	0	0	-67	0	0	0	3.873	3.988	-0.115	-0.002	0
5	138	2019	6	120,587	521,838	4.327	0	0	0	0	0	1	0	0	0	0	0	-66	0	48	0	4.553	4.327	0.226	0.127	0
5	139	2019	7	120,926	509,428	4.213	0	0	0	0	0	0	1	0	0	0	0	-65	3	-32	0	4.467	4.213	0.254	-0.201	0
5	140	2019	8	121,087	586,546	4.844	0	0	0	0	0	0	0	1	0	0	0	-64	-2	36	0	4.865	4.844	0.021	0.168	0
5	141	2019	9	121,179	546,087	4.506	0	0	0	0	0	0	0	0	1	0	0	-63	-2	62	0	4.970	4.506	0.463	0.245	0
5	142	2019	10	121,312	653,878	5.390	0	0	0	0	0	0	0	0	0	1	0	-62	-3	167	0	5.008	5.390	-0.382	0.550	0
5	143	2019	11	121,224	432,935	3.571	0	0	0	0	0	0	0	0	0	0	1	-61	4	22	0	3.606	3.571	0.035	-0.154	0
5	144	2019	12	121,176	456,248	3.765	0	0	0	0	0	0	0	0	0	0	0	-60	0	0	0	3.588	3.765	-0.177	0.000	0
6	145	2020	1	121,219	518,497	4.277	1	0	0	0	0	0	0	0	0	0	0	-59	0	0	0	4.070	4.277	-0.207	0.000	0

Kentucky American Water Company
Residential

																			Rain Lag 2	0.0	CDD Lag						
																			Rain Lag 1	1.0	1.0						
							0.4835	-0.0869	-0.0351	0.0379	0.2755	0.8274	1.0713	1.1015	1.1315	0.8662	0.1700	-0.0017	-0.0525	0.0022	0.1909				Weather	Billing
Period	Obs	Year	Month	Cust	Sales	UPC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Trend	Rain (Diff)	CDD (Diff)	COVID	Predicted	Actual	Variance	Effect	Adjustments
6	146	2020	2	121,285	353,896	2.918	0	1	0	0	0	0	0	0	0	0	0	-58	0	0	0	3.498	2.918	0.580	0.000	0
6	147	2020	3	121,524	456,507	3.757	0	0	1	0	0	0	0	0	0	0	0	-57	0	0	0	3.548	3.757	-0.208	0.000	0
6	148	2020	4	121,741	476,155	3.911	0	0	0	1	0	0	0	0	0	0	0	-56	1	5	1	3.791	3.911	-0.121	-0.020	0
6	149	2020	5	121,941	473,588	3.884	0	0	0	0	1	0	0	0	0	0	0	-55	1	-23	1	3.966	3.884	0.082	-0.081	0
6	150	2020	6	122,061	540,514	4.428	0	0	0	0	0	1	0	0	0	0	0	-54	0	-48	1	4.475	4.428	0.047	-0.121	0
6	151	2020	7	122,201	668,078	5.467	0	0	0	0	0	0	1	0	0	0	0	-53	-2	-52	1	4.829	5.467	-0.638	-0.009	0
6	152	2020	8	122,376	615,613	5.031	0	0	0	0	0	0	0	1	0	0	0	-52	-1	17	1	4.965	5.031	-0.065	0.098	0
6	153	2020	9	122,446	591,081	4.827	0	0	0	0	0	0	0	0	1	0	0	-51	-1	-51	1	4.817	4.827	-0.010	-0.078	0
6	154	2020	10	122,266	528,076	4.319	0	0	0	0	0	0	0	0	0	1	0	-50	1	-91	1	4.389	4.319	0.070	-0.240	0
6	155	2020	11	122,510	440,961	3.599	0	0	0	0	0	0	0	0	0	0	1	-49	0	-42	1	3.818	3.599	0.219	-0.112	0
6	156	2020	12	122,528	409,614	3.343	0	0	0	0	0	0	0	0	0	0	0	-48	0	0	1	3.759	3.343	0.416	0.000	0
7	157	2021	1	122,431	504,369	4.120	1	0	0	0	0	0	0	0	0	0	0	-47	0	0	0	4.050	4.120	-0.070	0.000	0
7	158	2021	2	122,325	413,144	3.377	0	1	0	0	0	0	0	0	0	0	0	-46	0	0	0	3.478	3.377	0.100	0.000	0
7	159	2021	3	122,462	434,249	3.546	0	0	1	0	0	0	0	0	0	0	0	-45	0	0	0	3.528	3.546	-0.018	0.000	0
7	160	2021	4	122,708	453,677	3.697	0	0	0	1	0	0	0	0	0	0	0	-44	0	-2	0	3.576	3.697	-0.121	-0.023	0
7	161	2021	5	122,990	482,580	3.924	0	0	0	0	1	0	0	0	0	0	0	-43	-2	-16	0	3.886	3.924	-0.038	0.051	0
7	162	2021	6	123,112	524,487	4.260	0	0	0	0	0	1	0	0	0	0	0	-42	0	-60	0	4.255	4.260	-0.005	-0.130	0
7	163	2021	7	123,209	572,926	4.650	0	0	0	0	0	0	1	0	0	0	0	-41	2	-33	0	4.463	4.650	-0.187	-0.165	0
7	164	2021	8	123,503	563,482	4.562	0	0	0	0	0	0	0	1	0	0	0	-40	0	-95	0	4.470	4.562	-0.092	-0.186	0
7	165	2021	9	123,599	558,747	4.521	0	0	0	0	0	0	0	0	1	0	0	-39	3	-6	0	4.499	4.521	-0.021	-0.185	0
7	166	2021	10	123,590	483,181	3.910	0	0	0	0	0	0	0	0	0	1	0	-38	0	-75	0	4.268	3.910	0.359	-0.149	0
7	167	2021	11	123,601	455,774	3.687	0	0	0	0	0	0	0	0	0	0	1	-37	3	-2	0	3.578	3.687	-0.109	-0.141	0
7	168	2021	12	123,551	427,962	3.464	0	0	0	0	0	0	0	0	0	0	0	-36	0	0	0	3.548	3.464	0.084	0.000	0
8	169	2022	1	123,618	503,978	4.077	1	0	0	0	0	0	0	0	0	0	0	-35	0	0	0	4.030	4.077	-0.047	0.000	0
8	170	2022	2	123,624	426,017	3.446	0	1	0	0	0	0	0	0	0	0	0	-34	0	0	0	3.457	3.446	0.011	0.000	0
8	171	2022	3	123,753	409,766	3.311	0	0	1	0	0	0	0	0	0	0	0	-33	0	0	0	3.508	3.311	0.196	0.000	0
8	172	2022	4	123,900	420,915	3.397	0	0	0	1	0	0	0	0	0	0	0	-32	0	-2	0	3.580	3.397	0.182	0.001	0
8	173	2022	5	124,047	482,359	3.889	0	0	0	0	1	0	0	0	0	0	0	-31	-1	4	0	3.857	3.889	-0.032	0.042	0
8	174	2022	6	124,070	512,695	4.132	0	0	0	0	0	1	0	0	0	0	0	-30	-1	19	0	4.456	4.132	0.324	0.091	0
8	175	2022	7	124,025	582,053	4.693	0	0	0	0	0	0	1	0	0	0	0	-29	-3	57	0	4.882	4.693	0.188	0.274	0
8	176	2022	8	124,268	625,686	5.035	0	0	0	0	0	0	0	1	0	0	0	-28	1	54	0	4.690	5.035	-0.345	0.055	0
8	177	2022	9	124,301	571,180	4.595	0	0	0	0	0	0	0	0	1	0	0	-27	0	15	0	4.694	4.595	0.099	0.030	85000
8	178	2022	10	124,272	562,287	4.525	0	0	0	0	0	0	0	0	0	1	0	-26	-2	-34	0	4.425	4.525	-0.100	0.028	-85000
8	179	2022	11	124,303	436,664	3.513	0	0	0	0	0	0	0	0	0	0	1	-25	-3	-40	0	3.769	3.513	0.256	0.070	0
8	180	2022	12	124,255	453,574	3.650	0	0	0	0	0	0	0	0	0	0	0	-24	0	0	0	3.527	3.650	-0.123	0.000	0
9	181	2023	1	124,380	492,594	3.960	1	0	0	0	0	0	0	0	0	0	0	-23	0	0	0	4.009	3.960	0.049	0.000	0
9	182	2023	2	124,457	457,973	3.680	0	1	0	0	0	0	0	0	0	0	0	-22	0	0	0	3.437	3.680	-0.243	0.000	0
9	183	2023	3	124,608	447,594	3.592	0	0	1	0	0	0	0	0	0	0	0	-21	0	0	0	3.487	3.592	-0.105	0.000	0
9	184	2023	4	124,684	443,036	3.553	0	0	0	1	0	0	0	0	0	0	0	-20	0	0	0	3.553	3.553	0.000	-0.005	70000
9	185	2023	5	124,835	488,603	3.914	0	0	0	0	1	0	0	0	0	0	0	-19	-2	-1	0	3.897	3.914	-0.017	0.103	-35000
9	186	2023	6	124,971	556,296	4.451	0	0	0	0	0	1	0	0	0	0	0	-18	-2	-55	0	4.344	4.451	-0.108	-0.001	-35000
9	187	2023	7	124,968	536,689	4.295	0	0	0	0	0	0	1	0	0	0	0	-17	2	-72	0	4.334	4.295	0.039	-0.253	0
9	188	2023	8	125,281	592,159	4.727	0	0	0	0	0	0	0	1	0	0	0	-16	0	17	0	4.648	4.727	-0.079	0.033	0
9	189	2023	9	125,306	639,492	5.103	0	0	0	0	0	0	0	0	1	0	0	-15	-2	15	0	4.772	5.103	-0.331	0.128	0
9	190	2023	10	125,393	558,006	4.450	0	0	0	0	0	0	0	0	0	1	0	-14	-2	-15	0	4.473	4.450	0.023	0.097	0
9	191	2023	11	125,404	493,712	3.937	0	0	0	0	0	0	0	0	0	0	1	-13	-2	5	0	3.777	3.937	-0.160	0.099	0
9	192	2023	12	125,418	445,702	3.554	0	0	0	0	0	0	0	0	0	0	0	-12	0	0	0	3.507	3.554	-0.047	0.000	0
10	193	2024	1	125,448	514,902	4.105	1	0	0	0	0	0	0	0	0	0	0	-11	0	0	0	3.989	4.105	-0.116	0.000	0
10	194	2024	2	125,548	453,453	3.612	0	1	0	0	0	0	0	0	0	0	0	-10	0	0	0	3.417	3.612	-0.195	0.000	0
10	195	2024	3	125,542	404,811	3.225	0	0	1	0	0	0	0	0	0	0	0	-9	0	0	0	3.467	3.225	0.242	0.000	0
10	196	2024	4	125,748	424,674	3.377	0	0	0	1	0	0	0	0	0	0	0	-8	-1	2	0	3.582	3.377	0.205	0.044	0
10	197	2024	5	125,816	489,808	3.893	0	0	0	0	1	0	0	0	0	0	0	-7	0	29	0	3.836	3.893	-0.057	0.062	0
10	198	2024	6	125,866	516,589	4.104	0	0	0	0	0	1	0	0	0	0	0	-6	1	16	0	4.312	4.104	0.208	-0.012	0
10	199	2024	7	126,038	676,303	5.366	0	0	0	0	0	0	1	0	0	0	0	-5	-2	64	0	4.808	5.366	-0.558	0.242	0
10	200	2024	8	126,313	575,977	4.560	0	0	0	0	0	0	0	1	0	0	0	-4	-1	38	0	4.743	4.560	0.183	0.148	0
10	201	2024	9	126,446	664,552	5.256	0	0	0	0	0	0	0	0	1	0	0	-3	-1	37	0	4.745	5.256	-0.511	0.121	0
10	202	2024	10	126,506	558,915	4.418	0	0	0	0	0	0	0	0	0	1	0	-2	3	18	0	4.245	4.418	-0.173	-0.111	0
10	203	2024	11	126,500	513,896	4.062	0	0	0	0	0	0	0	0	0	0	1	-1	-4	-7	0	3.829	4.062	-0.234	0.170	0
10	204	2024	12	126,477	393,238	3.109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.487	3.109	0.377	0.000	0

Kentucky American Water Company
Residential

																			Rain Lag 2	0.0	CDD Lag								
																			Rain Lag 1	1.0	1.0								
							0.4835	-0.0869	-0.0351	0.0379	0.2755	0.8274	1.0713	1.1015	1.1315	0.8662	0.1700	-0.0017	-0.0525	0.0022	0.1909								
Period	Obs	Year	Month	Cust	Sales	UPC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Trend	Rain (Diff)	CDD (Diff)	COVID	Predicted	Actual	Variance	Weather Effect	Billing Adjustments				
11	205	2025	1	126,511	502,048	3.968	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3.968								
11	206	2025	2	126,539	429,767	3.396	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	3.396								
11	207	2025	3	126,669	436,562	3.446	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	3.446								
11	208	2025	4	126,848	446,213	3.518	0	0	0	1	0	0	0	0	0	0	0	4	0	0	0	3.518								
11	209	2025	5	127,017	476,784	3.754	0	0	0	0	1	0	0	0	0	0	0	5	0	0	0	3.754								
11	210	2025	6	127,107	547,045	4.304	0	0	0	0	0	1	0	0	0	0	0	6	0	0	0	4.304								
11	211	2025	7	127,180	578,169	4.546	0	0	0	0	0	0	1	0	0	0	0	7	0	0	0	4.546								
11	212	2025	8	127,440	582,984	4.575	0	0	0	0	0	0	0	1	0	0	0	8	0	0	0	4.575								
11	213	2025	9	127,511	586,911	4.603	0	0	0	0	0	0	0	0	1	0	0	9	0	0	0	4.603								
11	214	2025	10	127,497	552,811	4.336	0	0	0	0	0	0	0	0	0	1	0	10	0	0	0	4.336								
11	215	2025	11	127,555	464,044	3.638	0	0	0	0	0	0	0	0	0	0	1	11	0	0	0	3.638								
11	216	2025	12	127,537	442,078	3.466	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	3.466								
12	217	2026	1	127,571	503,658	3.948	1	0	0	0	0	0	0	0	0	0	0	13	0	0	0	3.948								
12	218	2026	2	127,599	430,770	3.376	0	1	0	0	0	0	0	0	0	0	0	14	0	0	0	3.376								
12	219	2026	3	127,729	437,615	3.426	0	0	1	0	0	0	0	0	0	0	0	15	0	0	0	3.426								
12	220	2026	4	127,908	447,338	3.497	0	0	0	1	0	0	0	0	0	0	0	16	0	0	0	3.497								
12	221	2026	5	128,077	478,155	3.733	0	0	0	0	1	0	0	0	0	0	0	17	0	0	0	3.733								
12	222	2026	6	128,168	548,998	4.283	0	0	0	0	0	1	0	0	0	0	0	18	0	0	0	4.283								
12	223	2026	7	128,240	580,378	4.526	0	0	0	0	0	0	1	0	0	0	0	19	0	0	0	4.526								
12	224	2026	8	128,500	585,217	4.554	0	0	0	0	0	0	0	1	0	0	0	20	0	0	0	4.554								
12	225	2026	9	128,571	589,173	4.582	0	0	0	0	0	0	0	0	1	0	0	21	0	0	0	4.582								
12	226	2026	10	128,557	554,790	4.316	0	0	0	0	0	0	0	0	0	1	0	22	0	0	0	4.316								
12	227	2026	11	128,615	465,282	3.618	0	0	0	0	0	0	0	0	0	0	1	23	0	0	0	3.618								
12	228	2026	12	128,597	443,134	3.446	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	3.446								

REGRESSION MODEL

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.906282968
R Square	0.821348818
Adjusted R Square	0.795581821
Standard Error	0.242447018
Observations	120

ANOVA

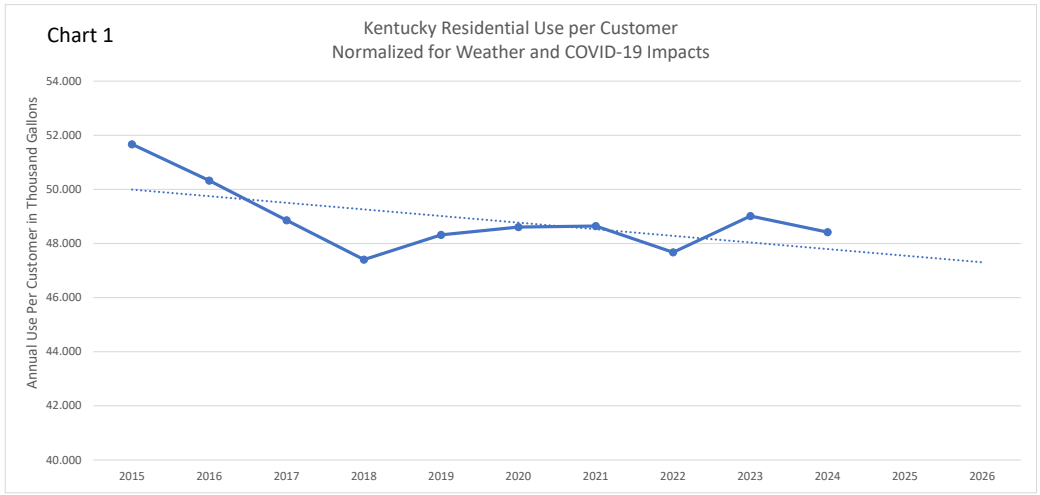
	df	*SS*	*MS*	*F*	*Significance F*
Regression	15.00	28.1053	1.8737	31.8760	4.33831E-32
Residual	104.00	6.1132	0.058780556		
Total	119.00	34.21851341			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	3.4866	0.0851	40.9927	0.0000	3.3180	3.6553
Jan	0.4835	0.1090	4.4361	0.0000	0.2674	0.6996
Feb	-0.0869	0.1090	-0.7977	0.4268	-0.3030	0.1291
Mar	-0.0351	0.1089	-0.3219	0.7482	-0.2511	0.1809
Apr	0.0379	0.1086	0.3488	0.7279	-0.1774	0.2531
May	0.2755	0.1085	2.5391	0.0126	0.0603	0.4908
Jun	0.8274	0.1085	7.6256	0.0000	0.6122	1.0425
Jul	1.0713	0.1085	9.8763	0.0000	0.8562	1.2864
Aug	1.1015	0.1085	10.1564	0.0000	0.8865	1.3166
Sep	1.1315	0.1084	10.4337	0.0000	0.9164	1.3465
Oct	0.8662	0.1084	7.9885	0.0000	0.6512	1.0813
Nov	0.1700	0.1084	1.5681	0.1199	-0.0450	0.3850
Trend	-0.0017	0.0007	-2.5930	0.0109	-0.0030	-0.0004
Rain (Diff)	-0.0525	0.0132	-3.9708	0.0001	-0.0786	-0.0263
CDD (Diff)	0.0022	0.0006	3.6401	0.0004	0.0010	0.0034
COVID	0.1909	0.0880	2.1705	0.0322	0.0165	0.3654

REGRESSION MODEL

SUMMARY OUTPUT

Annual Usage per Customer (UPC)								
Year	Predicted	Actual	Variance	Weather Effect	COVID Effect	Normalized	% Change (P)	% Change (A)
2015	49.14	50.81	1.68	-0.86	0.00	51.67		
2016	50.36	50.94	0.58	0.61	0.00	50.33	2.49%	0.25%
2017	49.08	48.44	-0.65	-0.42	0.00	48.86	-2.53%	-4.91%
2018	49.15	47.30	-1.86	-0.11	0.00	47.41	0.14%	-2.35%
2019	49.83	49.13	-0.70	0.81	0.00	48.32	1.37%	3.87%
2020	49.93	49.76	-0.16	-0.56	1.72	48.61	0.20%	1.29%
2021	47.60	47.72	0.12	-0.93	0.00	48.65	-4.66%	-4.11%
2022	48.87	48.26	-0.61	0.59	0.00	47.67	2.68%	1.14%
2023	48.24	49.22	0.98	0.20	0.00	49.02	-1.30%	1.97%
2024	48.46	49.09	0.63	0.66	0.00	48.42	0.46%	-0.26%
2025	47.55			0.00	0.00		-1.87%	
2026	47.31			0.00	0.00		-0.51%	



Kentucky American Water Company
Commercial

																		Rain Lag 2	0.2	CDD Lag						
																		Rain Lag 1	0.8	1.0						
							1.8327	-0.8951	-1.0840	0.9715	2.8280	5.7507	10.1429	10.7188	11.9938	10.0467	5.0292	-0.0021	-0.4846	0.0156	-2.9570				Weather	Billing
Period	Obs	Year	Month	Cust	Sales	UPC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Trend	Rain (Diff)	CDD (Diff)	COVID	Predicted	Actual	Variance	Effect	Adjustments
1	85	2015	1	8,902	293,149	32.931	1	0	0	0	0	0	0	0	0	0	0	-119	0	0	0	32.792	32.931	-0.138	0.000	0
1	86	2015	2	8,901	250,618	28.156	0	1	0	0	0	0	0	0	0	0	0	-118	0	0	0	30.062	28.156	1.906	0.000	0
1	87	2015	3	8,903	286,757	32.209	0	0	1	0	0	0	0	0	0	0	0	-117	0	0	0	29.871	32.209	-2.338	0.000	0
1	88	2015	4	8,902	318,071	35.730	0	0	0	1	0	0	0	0	0	0	0	-116	2	-2	0	30.926	35.730	-4.804	-0.998	0
1	89	2015	5	8,912	306,489	34.391	0	0	0	0	1	0	0	0	0	0	0	-115	6	-14	0	30.526	34.391	-3.864	-3.253	0
1	90	2015	6	8,925	359,653	40.297	0	0	0	0	0	1	0	0	0	0	0	-114	-1	22	0	37.410	40.297	-2.887	0.710	0
1	91	2015	7	8,945	360,509	40.303	0	0	0	0	0	0	1	0	0	0	0	-113	0	10	0	41.242	40.303	0.939	0.152	0
1	92	2015	8	8,950	355,492	39.720	0	0	0	0	0	0	0	1	0	0	0	-112	4	-51	0	39.097	39.720	-0.623	-2.567	0
1	93	2015	9	8,947	380,412	42.518	0	0	0	0	0	0	0	0	1	0	0	-111	-1	-87	0	41.937	42.518	-0.582	-1.000	0
1	94	2015	10	8,937	384,177	42.987	0	0	0	0	0	0	0	0	0	1	0	-110	-1	-14	0	41.255	42.987	-1.732	0.268	0
1	95	2015	11	8,943	323,138	36.133	0	0	0	0	0	0	0	0	0	0	1	-109	-1	-34	0	35.712	36.133	-0.421	-0.256	0
1	96	2015	12	8,931	272,577	30.520	0	0	0	0	0	0	0	0	0	0	0	-108	0	0	0	30.936	30.520	0.416	0.000	0
2	97	2016	1	8,942	289,610	32.388	1	0	0	0	0	0	0	0	0	0	0	-107	0	0	0	32.767	32.388	0.379	0.000	0
2	98	2016	2	8,944	271,968	30.408	0	1	0	0	0	0	0	0	0	0	0	-106	0	0	0	30.037	30.408	-0.371	0.000	0
2	99	2016	3	8,974	287,139	31.997	0	0	1	0	0	0	0	0	0	0	0	-105	0	0	0	29.846	31.997	-2.151	0.000	0
2	100	2016	4	9,000	302,784	33.643	0	0	0	1	0	0	0	0	0	0	0	-104	-1	0	0	32.597	33.643	-1.045	0.698	0
2	101	2016	5	9,016	297,687	33.018	0	0	0	0	1	0	0	0	0	0	0	-103	-1	-1	0	34.296	33.018	1.278	0.542	0
2	102	2016	6	9,020	335,616	37.208	0	0	0	0	0	1	0	0	0	0	0	-102	1	-50	0	35.347	37.208	-1.861	-1.328	0
2	103	2016	7	9,030	366,416	40.578	0	0	0	0	0	0	1	0	0	0	0	-101	0	35	0	41.597	40.578	1.020	0.533	0
2	104	2016	8	9,064	377,696	41.670	0	0	0	0	0	0	0	1	0	0	0	-100	0	20	0	42.084	41.670	0.414	0.446	0
2	105	2016	9	9,042	393,311	43.498	0	0	0	0	0	0	0	0	1	0	0	-99	2	90	0	43.444	43.498	-0.054	0.533	0
2	106	2016	10	9,022	373,340	41.381	0	0	0	0	0	0	0	0	0	1	0	-98	-1	58	0	42.340	41.381	0.959	1.378	0
2	107	2016	11	9,000	339,859	37.762	0	0	0	0	0	0	0	0	0	0	1	-97	-3	25	0	37.726	37.762	-0.036	1.784	0
2	108	2016	12	9,005	300,158	33.332	0	0	0	0	0	0	0	0	0	0	0	-96	0	0	0	30.911	33.332	-2.421	0.000	0
3	109	2017	1	8,996	290,394	32.280	1	0	0	0	0	0	0	0	0	0	0	-95	0	0	0	32.742	32.280	0.461	0.000	75000
3	110	2017	2	9,001	265,140	29.457	0	1	0	0	0	0	0	0	0	0	0	-94	0	0	0	30.012	29.457	0.555	0.000	-75000
3	111	2017	3	9,013	263,204	29.203	0	0	1	0	0	0	0	0	0	0	0	-93	0	0	0	29.821	29.203	0.618	0.000	0
3	112	2017	4	9,072	270,993	29.871	0	0	0	1	0	0	0	0	0	0	0	-92	-1	3	0	32.533	29.871	2.661	0.659	0
3	113	2017	5	9,088	309,894	34.099	0	0	0	0	1	0	0	0	0	0	0	-91	-2	37	0	35.383	34.099	1.284	1.655	0
3	114	2017	6	9,106	356,416	39.141	0	0	0	0	0	1	0	0	0	0	0	-90	0	-12	0	36.386	39.141	-2.754	-0.263	0
3	115	2017	7	9,111	380,671	41.781	0	0	0	0	0	0	1	0	0	0	0	-89	1	-35	0	40.087	41.781	-1.694	-0.952	0
3	116	2017	8	9,126	370,939	40.646	0	0	0	0	0	0	0	1	0	0	0	-88	0	-13	0	41.340	40.646	0.693	-0.273	0
3	117	2017	9	9,128	388,526	42.564	0	0	0	0	0	0	0	0	1	0	0	-87	1	-85	0	41.229	42.564	-1.335	-1.657	0
3	118	2017	10	9,103	335,198	36.823	0	0	0	0	0	0	0	0	0	1	0	-86	0	-67	0	39.701	36.823	2.879	-1.235	0
3	119	2017	11	9,090	317,267	34.903	0	0	0	0	0	0	0	0	0	0	1	-85	1	4	0	35.260	34.903	0.358	-0.656	0
3	120	2017	12	9,083	274,098	30.177	0	0	0	0	0	0	0	0	0	0	0	-84	0	0	0	30.886	30.177	0.709	0.000	0
4	121	2018	1	9,075	298,651	32.909	1	0	0	0	0	0	0	0	0	0	0	-83	0	0	0	32.716	32.909	-0.193	0.000	0
4	122	2018	2	9,080	271,150	29.862	0	1	0	0	0	0	0	0	0	0	0	-82	0	0	0	29.986	29.862	0.124	0.000	0
4	123	2018	3	9,071	257,712	28.411	0	0	1	0	0	0	0	0	0	0	0	-81	0	0	0	29.795	28.411	1.385	0.000	0
4	124	2018	4	9,086	285,279	31.398	0	0	0	1	0	0	0	0	0	0	0	-80	2	-2	0	30.988	31.398	-0.410	-0.861	0
4	125	2018	5	9,109	293,694	32.242	0	0	0	0	1	0	0	0	0	0	0	-79	0	-18	0	33.336	32.242	1.094	-0.367	0
4	126	2018	6	9,121	353,762	38.785	0	0	0	0	0	1	0	0	0	0	0	-78	2	120	0	37.445	38.785	-1.340	0.822	0
4	127	2018	7	9,117	356,290	39.080	0	0	0	0	0	0	1	0	0	0	0	-77	0	54	0	41.831	39.080	2.751	0.817	0
4	128	2018	8	9,134	378,743	41.465	0	0	0	0	0	0	0	1	0	0	0	-76	-1	-22	0	41.631	41.465	0.166	0.044	0
4	129	2018	9	9,118	359,368	39.413	0	0	0	0	0	0	0	0	1	0	0	-75	1	14	0	42.776	39.413	3.363	-0.084	0
4	130	2018	10	9,100	338,999	37.253	0	0	0	0	0	0	0	0	0	1	0	-74	6	56	0	38.991	37.253	1.738	-1.921	0
4	131	2018	11	9,082	304,450	33.522	0	0	0	0	0	0	0	0	0	0	1	-73	4	72	0	35.033	33.522	1.510	-0.859	0
4	132	2018	12	9,064	267,152	29.474	0	0	0	0	0	0	0	0	0	0	0	-72	0	0	0	30.860	29.474	1.386	0.000	0
5	133	2019	1	9,053	284,950	31.476	1	0	0	0	0	0	0	0	0	0	0	-71	0	0	0	32.691	31.476	1.215	0.000	0
5	134	2019	2	9,060	272,440	30.071	0	1	0	0	0	0	0	0	0	0	0	-70	0	0	0	29.961	30.071	-0.110	0.000	0
5	135	2019	3	9,048	255,026	28.186	0	0	1	0	0	0	0	0	0	0	0	-69	0	0	0	29.770	28.186	1.584	0.000	0
5	136	2019	4	9,087	268,143	29.508	0	0	0	1	0	0	0	0	0	0	0	-68	-1	0	0	32.206	29.508	2.698	0.383	0
5	137	2019	5	9,106	313,500	34.428	0	0	0	0	1	0	0	0	0	0	0	-67	0	0	0	33.805	34.428	-0.623	0.127	0
5	138	2019	6	9,122	343,454	37.651	0	0	0	0	0	1	0	0	0	0	0	-66	0	48	0	37.503	37.651	-0.149	0.904	0
5	139	2019	7	9,143	336,316	36.784	0	0	0	0	0	0	1	0	0	0	0	-65	2	-32	0	39.563	36.784	2.779	-1.425	0
5	140	2019	8	9,165	398,499	43.481	0	0	0	0	0	0	0	1	0	0	0	-64	-1	36	0	42.537	43.481	-0.943	0.975	0
5	141	2019	9	9,179	389,141	42.395	0	0	0	0	0	0	0	0	1	0	0	-63	-2	62	0	44.768	42.395	2.374	1.933	0
5	142	2019	10	9,208	426,010	46.265	0	0	0	0	0	0	0	0	0	1	0	-62	-3	167	0	45.039	46.265	-1.226	4.153	0
5	143	2019	11	9,180	332,217	36.189	0	0	0	0	0	0	0	0	0	0	1	-61	2	22	0	35.051	36.189	-1.138	-0.815	0
5	144	2019	12	9,161	296,200	32.333	0	0	0	0	0	0	0	0	0	0	0	-60	0	0	0	30.835	32.333	-1.498	0.000	0
6	145	2020	1	9,176	291,551	31.773	1	0	0	0	0	0	0	0	0	0	0	-59	0	0	0	32.665	31.773	0.892	0.000	0
6	146	2020	2	9,179	251,012	27.346	0	1	0	0	0	0	0	0	0	0	0	-58	0	0	0	29.935	27.346	2.589	0.000	0

Kentucky American Water Company
Commercial

																			Rain Lag 2	0.2	CDD Lag						
																			Rain Lag 1	0.8	1.0						
							1.8327	-0.8951	-1.0840	0.9715	2.8280	5.7507	10.1429	10.7188	11.9938	10.0467	5.0292	-0.0021	-0.4846	0.0156	-2.9570				Weather	Billing
Period	Obs	Year	Month	Cust	Sales	UPC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Trend	Rain (Diff)	CDD (Diff)	COVID	Predicted	Actual	Variance	Effect	Adjustments
6	147	2020	3	9,192	274,296	29.841	0	0	1	0	0	0	0	0	0	0	0	-57	0	0	0	29.744	29.841	-0.096	0.000	0
6	148	2020	4	9,173	253,820	27.670	0	0	0	1	0	0	0	0	0	0	0	-56	0	5	1	28.740	27.670	1.069	-0.101	0
6	149	2020	5	9,184	234,769	25.563	0	0	0	0	1	0	0	0	0	0	0	-55	1	-23	1	30.056	25.563	4.493	-0.639	0
6	150	2020	6	9,216	270,759	29.379	0	0	0	0	0	1	0	0	0	0	0	-54	0	-48	1	32.694	29.379	3.314	-0.922	0
6	151	2020	7	9,230	392,441	42.518	0	0	0	0	0	0	1	0	0	0	0	-53	-2	-52	1	37.940	42.518	-4.578	-0.066	0
6	152	2020	8	9,239	377,524	40.862	0	0	0	0	0	0	0	1	0	0	0	-52	-1	17	1	39.485	40.862	-1.377	0.905	0
6	153	2020	9	9,245	383,335	41.464	0	0	0	0	0	0	0	0	1	0	0	-51	-1	-51	1	39.421	41.464	-2.043	-0.431	0
6	154	2020	10	9,239	341,736	36.988	0	0	0	0	0	0	0	0	0	1	0	-50	0	-91	1	36.256	36.988	-0.732	-1.647	0
6	155	2020	11	9,194	295,889	32.183	0	0	0	0	0	0	0	0	0	0	1	-49	0	-42	1	32.010	32.183	-0.173	-0.874	0
6	156	2020	12	9,192	255,771	27.825	0	0	0	0	0	0	0	0	0	0	0	-48	0	0	1	27.852	27.825	0.027	0.000	0
7	157	2021	1	9,195	291,537	31.706	1	0	0	0	0	0	0	0	0	0	0	-47	0	0	0	32.640	31.706	0.934	0.000	0
7	158	2021	2	9,180	256,712	27.964	0	1	0	0	0	0	0	0	0	0	0	-46	0	0	0	29.910	27.964	1.946	0.000	0
7	159	2021	3	9,198	262,312	28.518	0	0	1	0	0	0	0	0	0	0	0	-45	0	0	0	29.719	28.518	1.201	0.000	0
7	160	2021	4	9,233	294,075	31.850	0	0	0	1	0	0	0	0	0	0	0	-44	0	-2	0	31.680	31.850	-0.170	-0.092	0
7	161	2021	5	9,268	306,781	33.101	0	0	0	0	1	0	0	0	0	0	0	-43	-1	-16	0	33.980	33.101	0.879	0.353	0
7	162	2021	6	9,283	316,768	34.123	0	0	0	0	0	1	0	0	0	0	0	-42	0	-60	0	35.781	34.123	1.657	-0.767	0
7	163	2021	7	9,307	374,380	40.226	0	0	0	0	0	0	1	0	0	0	0	-41	1	-33	0	39.743	40.226	-0.483	-1.195	0
7	164	2021	8	9,323	360,155	38.631	0	0	0	0	0	0	0	1	0	0	0	-40	0	-95	0	40.030	38.631	1.400	-1.481	0
7	165	2021	9	9,329	382,407	40.991	0	0	0	0	0	0	0	0	1	0	0	-39	3	-6	0	41.464	40.991	0.473	-1.320	0
7	166	2021	10	9,311	342,192	36.751	0	0	0	0	0	0	0	0	0	1	0	-38	0	-75	0	39.469	36.751	2.717	-1.366	0
7	167	2021	11	9,290	321,936	34.654	0	0	0	0	0	0	0	0	0	0	1	-37	2	-2	0	34.804	34.654	0.150	-1.011	0
7	168	2021	12	9,290	296,028	31.865	0	0	0	0	0	0	0	0	0	0	0	-36	0	0	0	30.784	31.865	-1.081	0.000	0
8	169	2022	1	9,289	306,483	32.994	1	0	0	0	0	0	0	0	0	0	0	-35	0	0	0	32.615	32.994	-0.380	0.000	0
8	170	2022	2	9,324	287,806	30.867	0	1	0	0	0	0	0	0	0	0	0	-34	0	0	0	29.885	30.867	-0.983	0.000	0
8	171	2022	3	9,352	274,562	29.359	0	0	1	0	0	0	0	0	0	0	0	-33	0	0	0	29.694	29.359	0.335	0.000	0
8	172	2022	4	9,368	301,878	32.224	0	0	0	1	0	0	0	0	0	0	0	-32	0	-2	0	31.531	32.224	-0.694	-0.216	0
8	173	2022	5	9,408	327,147	34.773	0	0	0	0	1	0	0	0	0	0	0	-31	-1	4	0	33.920	34.773	-0.853	0.319	0
8	174	2022	6	9,421	326,925	34.702	0	0	0	0	0	1	0	0	0	0	0	-30	-1	19	0	37.245	34.702	2.543	0.723	0
8	175	2022	7	9,414	399,414	42.428	0	0	0	0	0	0	1	0	0	0	0	-29	-2	57	0	42.995	42.428	0.568	2.083	0
8	176	2022	8	9,430	391,479	41.514	0	0	0	0	0	0	0	1	0	0	0	-28	0	54	0	42.127	41.514	0.612	0.641	0
8	177	2022	9	9,442	372,642	39.466	0	0	0	0	0	0	0	0	1	0	0	-27	0	15	0	42.857	39.466	3.390	0.098	0
8	178	2022	10	9,442	430,691	45.614	0	0	0	0	0	0	0	0	0	1	0	-26	-2	-34	0	41.036	45.614	-4.578	0.226	0
8	179	2022	11	9,394	333,577	35.510	0	0	0	0	0	0	0	0	0	0	1	-25	-3	-40	0	36.524	35.510	1.015	0.734	0
8	180	2022	12	9,399	304,401	32.387	0	0	0	0	0	0	0	0	0	0	0	-24	0	0	0	30.759	32.387	-1.628	0.000	0
9	181	2023	1	9,434	325,673	34.521	1	0	0	0	0	0	0	0	0	0	0	-23	0	0	0	32.589	34.521	-1.932	0.000	0
9	182	2023	2	9,443	320,459	33.936	0	1	0	0	0	0	0	0	0	0	0	-22	0	0	0	29.859	33.936	-4.077	0.000	0
9	183	2023	3	9,456	279,624	29.571	0	0	1	0	0	0	0	0	0	0	0	-21	0	0	0	29.668	29.571	0.097	0.000	0
9	184	2023	4	9,478	298,228	31.465	0	0	0	1	0	0	0	0	0	0	0	-20	0	0	0	31.844	31.465	0.378	0.122	0
9	185	2023	5	9,548	341,646	35.782	0	0	0	0	1	0	0	0	0	0	0	-19	-2	-1	0	34.329	35.782	-1.453	0.753	0
9	186	2023	6	9,561	345,899	36.178	0	0	0	0	0	1	0	0	0	0	0	-18	-2	-55	0	36.719	36.178	0.541	0.223	0
9	187	2023	7	9,558	377,560	39.502	0	0	0	0	0	0	1	0	0	0	0	-17	1	-72	0	39.282	39.502	-0.220	-1.605	0
9	188	2023	8	9,579	380,217	39.693	0	0	0	0	0	0	0	1	0	0	0	-16	0	17	0	41.515	39.693	1.823	0.055	0
9	189	2023	9	9,578	447,737	46.746	0	0	0	0	0	0	0	0	1	0	0	-15	-1	15	0	43.667	46.746	-3.080	0.933	0
9	190	2023	10	9,580	385,788	40.270	0	0	0	0	0	0	0	0	0	1	0	-14	-2	-15	0	41.686	40.270	1.416	0.902	0
9	191	2023	11	9,561	352,814	36.901	0	0	0	0	0	0	0	0	0	0	1	-13	-2	5	0	36.732	36.901	-0.170	0.967	0
9	192	2023	12	9,544	307,183	32.186	0	0	0	0	0	0	0	0	0	0	0	-12	0	0	0	30.733	32.186	-1.453	0.000	0
10	193	2024	1	9,538	322,409	33.803	1	0	0	0	0	0	0	0	0	0	0	-11	0	0	0	32.564	33.803	-1.239	0.000	0
10	194	2024	2	9,524	299,187	31.414	0	1	0	0	0	0	0	0	0	0	0	-10	0	0	0	29.834	31.414	-1.580	0.000	0
10	195	2024	3	9,529	288,510	30.277	0	0	1	0	0	0	0	0	0	0	0	-9	0	0	0	29.643	30.277	-0.634	0.000	0
10	196	2024	4	9,531	302,959	31.787	0	0	0	1	0	0	0	0	0	0	0	-8	-1	2	0	32.103	31.787	0.316	0.407	0
10	197	2024	5	9,563	347,092	36.295	0	0	0	0	1	0	0	0	0	0	0	-7	0	29	0	34.060	36.295	-2.235	0.510	0
10	198	2024	6	9,581	339,475	35.432	0	0	0	0	0	1	0	0	0	0	0	-6	1	16	0	36.368	35.432	0.936	-0.103	0
10	199	2024	7	9,571	417,293	43.600	0	0	0	0	0	0	1	0	0	0	0	-5	-1	64	0	42.519	43.600	-1.081	1.658	0
10	200	2024	8	9,578	429,613	44.854	0	0	0	0	0	0	0	1	0	0	0	-4	-1	38	0	42.690	44.854	-2.164	1.255	0
10	201	2024	9	9,590	443,141	46.209	0	0	0	0	0	0	0	0	1	0	0	-3	-1	37	0	43.702	46.209	-2.507	0.994	0
10	202	2024	10	9,579	396,949	41.440	0	0	0	0	0	0	0	0	0	1	0	-2	2	18	0	40.000	41.440	-1.440	-0.759	0
10	203	2024	11	9,566	361,783	37.820	0	0	0	0	0	0	0	0	0	0	1	-1	-2	-7	0	36.725	37.820	-1.094	0.986	0
10	204	2024	12	9,544	240,166	25.164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30.708	25.164	5.544	0.000	0

Kentucky American Water Company
Commercial

																		Rain Lag 2	0.2	CDD Lag							
																		Rain Lag 1	0.8	1.0							
							1.8327	-0.8951	-1.0840	0.9715	2.8280	5.7507	10.1429	10.7188	11.9938	10.0467	5.0292	-0.0021	-0.4846	0.0156	-2.9570				Weather	Billing
Period	Obs	Year	Month	Cust	Sales	UPC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Trend	Rain (Diff)	CDD (Diff)	COVID	Predicted	Actual	Variance	Effect	Adjustments
11	205	2025	1	9,553	310,845	32.538	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	32.538				
11	206	2025	2	9,569	285,225	29.808	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	29.808				
11	207	2025	3	9,606	284,510	29.617	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	29.617				
11	208	2025	4	9,610	304,349	31.671	0	0	0	1	0	0	0	0	0	0	0	4	0	0	0	31.671				
11	209	2025	5	9,617	322,405	33.525	0	0	0	0	1	0	0	0	0	0	0	5	0	0	0	33.525				
11	210	2025	6	9,588	349,426	36.446	0	0	0	0	0	1	0	0	0	0	0	6	0	0	0	36.446				
11	211	2025	7	9,588	391,517	40.836	0	0	0	0	0	0	1	0	0	0	0	7	0	0	0	40.836				
11	212	2025	8	9,588	397,018	41.410	0	0	0	0	0	0	0	1	0	0	0	8	0	0	0	41.410				
11	213	2025	9	9,588	409,223	42.682	0	0	0	0	0	0	0	0	1	0	0	9	0	0	0	42.682				
11	214	2025	10	9,588	390,534	40.733	0	0	0	0	0	0	0	0	0	1	0	10	0	0	0	40.733				
11	215	2025	11	9,588	342,408	35.714	0	0	0	0	0	0	0	0	0	0	1	11	0	0	0	35.714				
11	216	2025	12	9,588	294,170	30.682	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	30.682				
12	217	2026	1	9,588	311,721	32.513	1	0	0	0	0	0	0	0	0	0	0	13	0	0	0	32.513				
12	218	2026	2	9,588	285,547	29.783	0	1	0	0	0	0	0	0	0	0	0	14	0	0	0	29.783				
12	219	2026	3	9,588	283,716	29.592	0	0	1	0	0	0	0	0	0	0	0	15	0	0	0	29.592				
12	220	2026	4	9,588	303,402	31.645	0	0	0	1	0	0	0	0	0	0	0	16	0	0	0	31.645				
12	221	2026	5	9,588	321,182	33.500	0	0	0	0	1	0	0	0	0	0	0	17	0	0	0	33.500				
12	222	2026	6	9,588	349,183	36.420	0	0	0	0	0	1	0	0	0	0	0	18	0	0	0	36.420				
12	223	2026	7	9,588	391,274	40.810	0	0	0	0	0	0	1	0	0	0	0	19	0	0	0	40.810				
12	224	2026	8	9,588	396,774	41.384	0	0	0	0	0	0	0	1	0	0	0	20	0	0	0	41.384				
12	225	2026	9	9,588	408,979	42.657	0	0	0	0	0	0	0	0	1	0	0	21	0	0	0	42.657				
12	226	2026	10	9,588	390,291	40.708	0	0	0	0	0	0	0	0	0	1	0	22	0	0	0	40.708				
12	227	2026	11	9,588	342,165	35.688	0	0	0	0	0	0	0	0	0	0	1	23	0	0	0	35.688				
12	228	2026	12	9,588	293,926	30.657	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	30.657				

REGRESSION MODEL

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.933212353
R Square	0.870885296
Adjusted R Square	0.852262983
Standard Error	1.969150231
Observations	120

ANOVA

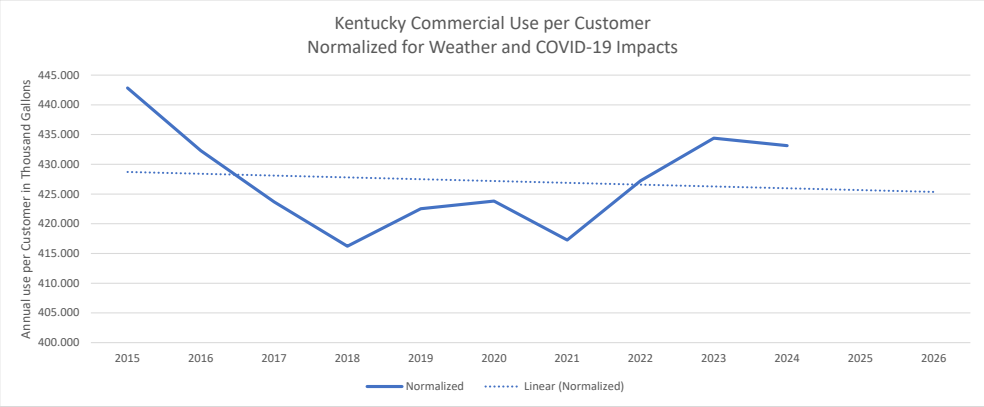
	df	*SS*	*MS*	*F*	*Significance F*
Regression	15.00	2720.0463	181.3364	46.7657	2.9196E-39
Residual	104.00	403.2655	3.877552631		
Total	119.00	3123.311774			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	30.7077	0.6914	44.4163	0.0000	29.3367	32.0787
Jan	1.8327	0.8853	2.0703	0.0409	0.0772	3.5882
Feb	-0.8951	0.8849	-1.0115	0.3141	-2.6500	0.8598
Mar	-1.0840	0.8847	-1.2254	0.2232	-2.8383	0.6703
Apr	0.9715	0.8817	1.1018	0.2731	-0.7769	2.7198
May	2.8280	0.8814	3.2085	0.0018	1.0801	4.5759
Jun	5.7507	0.8812	6.5258	0.0000	4.0032	7.4981
Jul	10.1429	0.8810	11.5125	0.0000	8.3958	11.8901
Aug	10.7188	0.8809	12.1681	0.0000	8.9719	12.4656
Sep	11.9938	0.8808	13.6173	0.0000	10.2472	13.7404
Oct	10.0467	0.8807	11.4077	0.0000	8.3003	11.7932
Nov	5.0292	0.8806	5.7108	0.0000	3.2829	6.7756
Trend	-0.0021	0.0053	-0.3963	0.6927	-0.0127	0.0085
Rain (Diff)	-0.4846	0.1295	-3.7425	0.0003	-0.7414	-0.2278
CDD (Diff)	0.0156	0.0049	3.1769	0.0020	0.0059	0.0254
COVID	-2.9570	0.7147	-4.1377	0.0001	-4.3743	-1.5398

REGRESSION MODEL

SUMMARY OUTPUT

Annual Usage per Customer (UPC)								
Year	Predicted	Actual	Variance	Weather Effect	COVID Effect	Normalized	% Change (P)	% Change (A)
2015	421.77	435.90	14.13	-6.94	0.00	442.84		
2016	432.99	436.88	3.89	4.59	0.00	432.30	2.66%	0.23%
2017	425.38	420.95	-4.43	-2.72	0.00	423.67	-1.76%	-3.65%
2018	425.39	413.81	-11.57	-2.41	0.00	416.22	0.00%	-1.69%
2019	433.73	428.77	-4.96	6.24	0.00	422.53	1.96%	3.61%
2020	396.80	393.41	-3.38	-3.78	-26.61	423.80	-8.51%	-8.25%
2021	420.00	410.38	-9.62	-6.88	0.00	417.26	5.85%	4.31%
2022	431.19	431.84	0.65	4.61	0.00	427.23	2.66%	5.23%
2023	428.62	436.75	8.13	2.35	0.00	434.40	-0.59%	1.14%
2024	430.91	438.09	7.18	4.95	0.00	433.15	0.53%	0.31%
2025	425.66			0.00	0.00		-1.22%	
2026	425.36			0.00	0.00		-0.07%	



COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-AMERICAN WATER COMPANY FOR AN ADJUSTMENT OF RATES	**)** **)** **)**	**CASE NO. 2025-00122**

DIRECT TESTIMONY OF ROBERT V. MUSTICH

May 16, 2025

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please provide your name, position and business address.

A. My name is Robert V. Mustich. I am Managing Director and East Region Work and Rewards Business Leader for WTW ("WTW"). WTW is a leading global professional services company which has 45,000 associates throughout the world, and offers solutions in the areas of corporate risk and broking; human capital and benefits; health care exchange solutions; and investment, risk, and reinsurance. My business address is 800 North Glebe Road, Arlington, VA 22203.

Q. Please explain WTW's experience in providing compensation and benefits consulting services to organizations like Kentucky-American Water Company ("KAWC," "Kentucky-American Water," or the "Company").

A. WTW has extensive experience serving clients in the utility industry, having served approximately 100 utilities in the U.S. within the last year. Because we invest so heavily in our utility industry capabilities, we have rich competitive industry compensation and benefits information that enables us to benchmark Kentucky American Water against similar companies in the U.S. Given WTW's breadth and depth of resources, we are frequently engaged by companies to evaluate the competitiveness of their compensation philosophy, compensation and benefit levels, performance compensation design and pay structures, and other consulting services. WTW and I have conducted similar competitive compensation studies for other utility clients.

Q. Please state your educational and professional background and experience.

A. I graduated from American University with a BS/BA in Human Resources Management. I have over 30 years of industry and compensation consulting services experience, have

been with WTW for over 25 years, and have assisted management and Boards of Directors at numerous companies in designing and assessing total compensation programs. Since joining the firm in 1997, I have consulted with numerous utilities and serve as a senior member of our utilities industry practice. I have conducted competitive assessments of total compensation for numerous public utilities throughout the U.S. Prior to joining WTW, I was a senior compensation consultant for PricewaterhouseCoopers (formally Coopers and Lybrand, LLP) performing similar compensation consulting services for clients. Prior to that, I held corporate senior staff compensation and benefits positions.

Q. Have you testified previously before the Kentucky Public Service Commission ("Commission)?

A. Yes, I have.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to demonstrate that the Target Total Remuneration provided to Kentucky-American Water employees, when viewed against the markets for talent for employees in similar positions, is below the competitive range of market. WTW specifically focused on the following aspects of Kentucky-American Water's program:

- Total market-based compensation philosophy;
- Competitive market positioning of Target Total Remuneration (defined in my testimony below);
- Design of annual performance compensation program; and
- Design of long-term performance compensation program.

Q. Please define Target Total Cash Compensation.

A. Target Total Cash Compensation represents the sum of base salary plus target annual performance compensation.

Q. Please define Target Total Direct Compensation.

A. Target Total Direct Compensation represents the sum of base salary, plus target annual performance compensation, plus long-term performance compensation.

Q. Please define Target Total Remuneration.

A. Target Total Remuneration represents the sum of base salary, plus target annual performance compensation, plus long-term performance compensation, plus benefits.

III. OVERVIEW OF MARKET-BASED TOTAL COMPENSATION PHILOSOPHY

Q. Does Kentucky-American Water have a defined compensation philosophy?

A. Yes, American Water Works Company, Inc. ("American Water"), KAWC's parent, has a defined compensation philosophy that is utilized by Kentucky-American Water.

Q. How would you describe American Water's compensation philosophy?

A. American Water's market-based total compensation philosophy is to generally pay compensation that is competitive with those of comparable organizations for jobs of similar responsibility. To carry out this philosophy, American Water's objective is to target its Total Direct Compensation at the median (50^{th} percentile) of the market, with greater earning opportunity for exceptional performance.

Q. How does this compensation philosophy compare with other utilities?

A. It is comparable. WTW examined the proxy statements for two peer groups, which are further described in Exhibit **RVM-1 (Confidential)**: (1) Large Utility Peer Group, comprised of 15 publicly-traded utilities comparable in size to American Water and (2)

Small Utility Peer Group, comprised of 10 publicly-traded utilities comparable to Kentucky-American Water. Based on our review, we believe American Water's compensation philosophy is well-aligned with utility peers, as the overall majority of Large Utility Peer Group companies (14 of 15, or 93%) and Small Utility Peer Group companies (3 of 10, or 30%) target the market median (50th percentile) for some or all pay elements. Our consulting experience also suggests that American Water's median (50th percentile) pay philosophy is comparable to typical market practice found in general industry.

IV. SUMMARY OF WTW'S TOTAL REMUNERATION STUDY

Q. Did you conduct a compensation study of Kentucky American Water's Target Total Remuneration Program?

A. Yes, and a copy of the Study is included as **Exhibit RVM-1 (Confidential)** to my testimony.

Q. Please describe how the study was conducted.

A. WTW utilized three data sources to assess Kentucky American Water's Target Total Remuneration Program. As we did in assessing American Water's total compensation philosophy, we assessed the design of its annual performance and long-term performance compensation programs using proxy disclosures of groups of public utilities within the Large Utility Peer Group and the Small Utility Peer Group. The competitive market positioning of Kentucky American Water's Target Total Remuneration levels was compared to WTW published compensation and benefits surveys.

Q. How did you define "competitive" for the purposes of your study?

A. WTW and typical market practice defines an element of total remuneration as being competitive if it falls within a range that extends between 10% below to 10% above market median of total remuneration.

Q. Please describe how you assessed the competitiveness of Kentucky American Water's Target Total Remuneration levels?

A. WTW assessed the competitiveness of Target Total Remuneration provided by Kentucky American Water to its employee population based on a selection of Kentucky American Water jobs ("benchmark jobs"). Benchmark jobs are those positions that are common across comparable organizations and for which compensation data are available from published surveys.

To conduct this analysis we reviewed compensation data provided to us by Kentucky American Water and examined it against WTW's compensation and benefits surveys. These surveys are comprised of compensation and benefits data from over 1,000 U.S. based companies, and WTW has been conducting these surveys for over 30 years.

Kentucky American Water's current compensation and benefit levels were compared to the market 50th percentile (market median) for two different market perspectives (*i.e.*, a national and midwest perspective discussed in my testimony below), to determine the competitiveness of its Target Total Remuneration and to validate the alignment with American Water's current compensation philosophy (targeting the 50th percentile of market).

To derive 50th percentile (median) market values, WTW weighted energy services and general industry survey data 60% and 40%, respectively, to place a greater weight on

the energy services market data because energy services includes 2/3 regulated utilities most similar to Kentucky American Water for positions that are not industry specific. Given that these positions can be recruited or lost to companies in any industry, the use of general industry survey data ensures that non-industry specific positions are being compensated competitively. Industry specific positions were compared only to energy services industry data.

WTW's assessment of benchmark jobs represents approximately 60% of the population of Kentucky American Water employees as of February 19, 2025. Specific details regarding our study, which includes a detailed description of the study methodology, are included in **Exhibit RVM-1 (Confidential)**.

Q. Please describe how you determined the competitiveness of Kentucky American Water's Target Total Remuneration?

A. Two different market perspectives were examined to validate the competitiveness of Kentucky American's Target Total Remuneration.

A national market perspective was examined which consisted of the entire population of survey participants in WTW's Energy Services and General Industry databases. This perspective represents a U.S. national total remuneration perspective and is aligned with American Water's compensation philosophy.

A Midwest regional perspective including Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Missouri, Nebraska, Ohio, Oklahoma, Tennessee, Wisconsin, and West Virginia labor markets was also examined, which consisted of the same entire survey participant population from WTW's Energy Services Industry and General Industry databases but was customized to identify a Midwest-specific geographic

dataset. This dataset identified employees who work in the fourteen states listed above for companies headquartered anywhere in the United States.

Q. What were the results from the national perspective?

A. Kentucky American Water's Target Total Remuneration as reported in Table 1 (below) is at the low end of the market median range by being 9% (represents a weighted average of all positions reviewed) **below** the market median. Again, market competitiveness is defined to fall within a plus or minus 10% of median range.

Table 1

Summary of Kentucky American Water Target Total Remuneration vs. Market Median (National Market Perspective)			
Base Pay	**Target Total Cash Compensation**	**Target Total Direct Compensation**	**Target Total Remuneration**
-9%	-8%	-10%	-9%

Q. What were the compensation study results from the Midwest Regional perspective?

A. Kentucky American Water's Target Total Remuneration as reported in Table 2 (below) is 7% **below** median, but within the competitive market median range (represents a weighted average of all positions reviewed).

Table 2

Summary of Kentucky American Water Target Total Remuneration vs. Market Median (Mid-West Regional Market Perspective)			
Base Pay	**Target Total Cash Compensation**	**Target Total Direct Compensation**	**Target Total Remuneration**
-7%	-5%	-8%	-7%

Q. In your opinion and based on the results of the study, are Kentucky American Water employees overcompensated?

A. No. Kentucky American Water employees' Target Total Renumeration is competitive, yet it generally falls at the low end of the competitive range (+/- 10%) of market median for each element of total remuneration from a National and Midwest market perspective.

V. SUMMARY OF WTW'S PERFORMANCE COMPENSATION PROGRAM ASSESSMENT

Q. Did you conduct an assessment of American Water's performance compensation program?

A. Yes. I assessed American Water's annual and long-term performance compensation programs.

Q. What was the purpose of this assessment?

A. This assessment was completed to compare the design of American Water's performance compensation program (that is applicable to Kentucky American Water) and its various elements to market practice.

Q. What were the findings of the assessment?

A. Overall, our review indicates that American Water's performance compensation programs are comparable to and competitive with designs of utility peers, based on a review of the Large Utility Peer Group and the Small Utility Peer Group referenced earlier. Like American Water, every company in the Large Utility Peer Group and all but one in the Small Utility Peer Group has performance compensation programs which are used to help attract, motivate and retain critically skilled employees needed to successfully run the business. Companies design their performance compensation programs to align with their

business strategies and circumstances, so there tends to be a range of practices regarding how the programs are designed. Even with this variability in program design, the majority of peers use financial metrics, such as EPS, prominently in their programs, in addition to operational metrics. American Water's performance compensation programs complement each other by assessing performance holistically using a balanced scorecard approach, incorporating growth, customer, safety, environmental leadership, people and stock performance. American Water's program designs are consistent with market practices for utilities. Specific details regarding our assessment are included in **Exhibit RVM-1 (Confidential)**.

VI. OVERALL FINDINGS

Q. What are the conclusions of your analysis?

A. Overall, our analysis indicates that Kentucky American Water's Target Total Remuneration is comparable to and competitive with market practices of other similarly-sized utilities and is therefore reasonable. Kentucky American Water, like all the companies it competes with for talent, has to provide a competitive total remuneration opportunity delivered via programs that benefit employees, customers, and shareholders to remain competitive. Kentucky American Water attempts to achieve this goal with its balanced and competitive base salary, short-term and long-term performance compensation programs, and benefits. My experience working with both utilities and general industry companies, and the study results included as **Exhibit RVM-1 (Confidential)** conclude that the Kentucky American Water's programs are consistent with a broad range of market norms and are not excessive in design or level of pay.

Q. What other conclusion can you draw from your assessment?

A. Kentucky American Water provides a Total Direct Compensation opportunity delivered through market-based programs that are intended to compete in the market for talent. Kentucky American Water attempts to achieve this goal by delivering total compensation through balanced base salary and annual and long-term performance compensation programs which align employees', customers', and investors' interests. The Company's performance compensation plans are important management tools to reinforce performance expectations, which is why they are so universally present in both the utility and general business sectors nationally.

Q. Are there other ways that Kentucky American Water's compensation programs benefits customers?

A. Yes. Customers receive a benefit when a utility retains a talented workforce, because a stable workforce avoids the costs of hiring and training new employees. Because Kentucky American Water's performance pay program makes Kentucky American Water's employees' total compensation reasonable, the Company's performance pay helps ensure a stable workforce. Kentucky American Water's long-term performance compensation program is particularly intended to reduce attrition at the higher ranks of the organization. Senior management turnover and the loss of expertise can degrade the continuity of strategy and execution, which is why these types of compensation programs are well accepted in the industry. Importantly, the long-term performance compensation program achieves its goals of reducing leadership attrition at a lower cost to customers than simply increasing leadership's base pay, because employees must remain with the organization to realize the full vesting of their awards over a three-year period.

Q. Does this conclude your testimony?

A. Yes, it does.

VERIFICATION

STATE OF DELAWARE)

) SS:

COUNTY OF SUSSEX)

The undersigned, Robert V. Mustich, being duly sworn, deposes and says that he is Managing Director and East Region Work and Rewards Business Leader for WTW, that he has personal knowledge of the matters set forth in the accompanying testimony for which he is identified as the responsible witness, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.

Robert V. Mustich

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 7th day of May, 2025.

Notary Public

My Commission Expires:
02/10/2026

JOHN CHARLES PAPUCHIS
NOTARY PUBLIC
STATE OF DELAWARE
My Commission Expires February 10, 2026

EXHIBIT RVM-1 TO KAW_DT_RM_051625 FILED UNDER SEAL PURSUANT TO THE PETITION FOR CONFIDENTIAL TREATMENT FILED ON MAY 16, 2025

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-	**)**	
AMERICAN WATER COMPANY FOR AN	**)**	**CASE NO. 2025-00122**
ADJUSTMENT OF RATES	**)**	

DIRECT TESTIMONY OF ROBERT PRENDERGAST

May 16, 2025

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Robert Prendergast. My business address is 1 Water Street, Camden, NJ 08102.

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

A. I am employed by American Water Works Service Company, Inc. (the "Service Company") as Senior Manager Regulatory Services.

Q. What are your duties as Senior Manager Regulatory Services?

A. As Senior Manager Regulatory Services, my duties consist of reviewing, preparing, and assisting in regulatory filings and related activities for all of the regulated subsidiaries of American Water. I am also responsible for collaborating with state operations and other areas of the Service Company to ensure accurate expense and capital information for regulatory activity in my purview.

Q. Have you previously filed testimony before this Commission?

A. No, I have not previously filed testimony with the Kentucky Public Service Commission. However, I have filed testimony before the Tennessee Public Utility Commission in Case No. 24-00032-GRC.

Q. Please state your educational and professional background and state whether you are a member of any professional organizations.

A. I have been employed by the Service Company since July of 2019. Before moving to my current role as Senior Manager Regulatory Services in 2023, I worked as a Senior Financial Analyst for the Acquisitions Department. Before coming to the Service Company, I was employed as a Global FP&A Financial Analyst at a logistics company. Prior to that, I

worked as a Senior Revenue and Controls Analyst for a telecommunications company. I am a graduate of Rutgers University with a Bachelor of Science Degree in Accounting and a Bachelor of Arts in Political Science. I also received a Master's Degree in Business Administration, with a concentration in Finance, from Rutgers University.

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

A. The purpose of my Direct Testimony is to support and explain Kentucky American Water Company, Inc.'s ("KAWC," "Kentucky-American," or "Company") Operational and Maintenance ("O&M") expense levels in the areas of Labor and Labor-related, Pension, Other Post-Employment Benefits ("OPEBs"), Production expenses, Support Services, Insurance Other than Group ("IOTG"), Uncollectibles, Taxes Other than Income, Contract Services, Customer Accounting, and Employee-Related expenses. Company witness Michi Chao discusses expenses associated with Building Maintenance and Services, Maintenance and Supplies, Miscellaneous, Office, Postage, Rent, Telecommunication and Transportation in her Direct Testimony, and Company witness Dominic DeGrazia addresses overall O&M expense and regulatory expense in his Direct Testimony.

Q. Are you sponsoring any exhibits?

A. Yes, I am sponsoring Exhibit 21, Exhibit 22, Exhibit 35, and Exhibit 37 G.

II. O&M EXPENSES

A. Labor and Labor Related

Q. Please describe KAWC's labor and labor related expenses.

A. Kentucky-American's labor and labor related expenses are associated with local employees who are employed by KAWC. The Company's labor force produces high quality drinking water, maintains the production facilities and distribution systems, monitors water quality,

provides engineering services, and supports the efficient management of local operations. Kentucky-American witness William A. Lewis discusses the employee levels and staffing more fully in his Direct Testimony.

There are three classifications of employees at Kentucky-American: union hourly employees, non-union hourly employees, and exempt employees. Union hourly employees receive base pay, overtime pay, and in some cases other compensation (such as wage premiums) and are eligible for performance pay. Non-union hourly employees receive base pay, overtime pay and are eligible for performance pay. Exempt employees receive base pay and are eligible for performance pay. Therefore, total salaries and wages for each classification of employees include fixed pay (base pay) and variable pay (e.g., overtime, shift pay, or performance pay).

The costs associated with Company labor that are discussed in my testimony include:

1. Salaries and Wages
2. Group Insurance
3. Other Benefits, including:
    a. 401k
    b. Defined Contribution Plan ("DCP")
    c. Retiree Medical Expense
    d. Employee Stock Purchase Plan ("ESPP")
    e. Other Benefits
4. Payroll Taxes

5. Pension and Other Post-Employment Benefits ("OPEBs")

The pro forma forecasted test period labor and related expense can be found in the Company's Filing Exhibit 37, Schedules C, D and G.

Q. Please describe the overall approach to calculating labor and related expenses.

A. The forecasted test period labor and related expenses were calculated on a position-by-position basis, based on 168 full-time positions. Company witness Lewis provides additional information regarding the Company's employee levels. Forecasted test period labor expense is based on the planned staffing level at hourly rates per contract for union employees and wage rates for non-union employees that reflect forecasted pay increases. Because some labor and labor related costs are capitalized with capital projects and programs, a capitalization percentage is used to assist in calculating net expense as described below. An adjustment is also made to remove costs appropriately charged to wastewater operations, as also further discussed below. As a result, O&M labor expense, as reflected in the filing, represents costs related to water operations that are charged to expense on the Company's income statement.

Q. Please describe how the various components of pro forma Salaries and Wages were calculated.

A. Salary and wage expense is composed of four components: (1) base pay, (2) overtime expense, (3) wage premiums required by union contract, and (4) annual and long-term performance compensation for eligible employees.

Base Pay - To calculate the gross regular-time cost, wage rates projected to be in effect for each month of the forecasted test period were applied to the working hours for each month, for a total of 2,088 base hours each for all full-time hourly employees. Wage

rates for union employees were based on collective bargaining agreements ("CBAs") for each month of the forecasted test period. Forecasted test period wages for non-union employees were based on actual rates effective as of January 6, 2025, with an increase of 3.95% estimated for January 2026.

Overtime - The second component of the labor expense is overtime expense. Overtime hours are based on the forecasted overtime. Overtime hours were calculated using a 3-year average of hours incurred for each position 2022-2024, with an adjustment to the total 2023 overtime hours to remove overtime hours for non-recurring projects not consistent with overtime hours in 2022 or 2024. Overtime hours are paid at three different multiples to base rates (1.5x, 2.0x, or 2.5x) which are determined based on the timing of the work performed (normal overtime, weekend, or holiday, respectively). The overtime multiplier for the forecast is based on a three-year average 2022-2024. Each employee's overtime gross expense is calculated by multiplying the employee's hourly rate of pay by the overtime multiplier, then by the overtime hours.

Wage Premiums – Union employees' CBAs include provisions for certain wage premiums for work completed on second or third shifts, per the negotiated CBA. The average annual gross shift premium for groups of positions was calculated over the three years 2022-2024 and allocated by position according to payroll history; however, the wage premium amounts were minimal and therefore KAWC did not project any expenses associated with wage premiums for the future test year.

Performance Pay – The last component of labor expense is the annual and long-term performance compensation expense. Performance pay was calculated on a position-by-position basis for each employee and was based on each position's target percentage

for both the Annual Performance Plan ("APP") and Long-Term Performance Plan ("LTPP"). The target percentage was multiplied by each eligible employee's pro forma base salary in the forecasted test period to determine APP and LTPP costs for that period.

Q. Once the gross costs are calculated, how is the forecasted test period's O&M Salaries & Wages expense derived?

A. To derive O&M Salaries & Wages expense, each position's gross costs are multiplied by both a "Water Percentage" and an "O&M Percentage." The "Water Percentage" is assessed by position and is based on the average payroll charges to water operations over the three years 2022-2024. Applying this percentage has the effect of excluding projected labor utilized in support of the wastewater operations. Because some labor and labor related costs are capitalized through capital projects and programs, a capitalization percentage is also used to calculate net expense, as applied based on the position type. The O&M Percentage, calculated as one minus the capitalization percentage, is based on the average ratio of dollars charged to capital versus O&M for each position type over the three years 2022-2024. This eliminates from expenses the labor and labor related costs which are appropriately charged to capital projects and programs. In other words, the total cost deducts the capitalized dollars to determine the O&M labor and related expenses. The "Management Allocation Percentage" is an allocation of management's salaries[1] to wastewater operations and was based on the 0.985% factor that was determined in Case No. 2018-00358. To summarize: the total forecasted expense is derived by the gross costs which are netted for Water Percentage, O&M Percentage, and the Management Allocation Percentage.

[1] The positions that fall within this category are considered management-level. KAWC has included the Management Allocation Percentage to isolate time spent on wastewater activities as directed in Case No. 2018-00358.

B. Group Insurance

Q. Please describe the components of group insurance expense.

A. Group insurance expense includes certain insurance coverages that Kentucky-American provides its employees. These can be grouped into two primary categories: (1) basic life, short-term disability, long-term disability and "AD&D" (accidental death and disability) insurance and (2) medical, dental, and vision insurance.

Q. Please describe the forecasted test period calculation for group insurance expense.

A. Calculations are based on the number of full-time positions and performed on position-by-position basis, taking into account each employee's group insurance elections and using the latest available premium rates. Following a methodology similar to labor, each employee's group insurance costs are multiplied by their Water Percentage and O&M Percentage to arrive at Water O&M-related expense for each employee.

- Basic life, short- and long-term disability and AD&D. The 2025 rates are applied on a position-by-position basis, according to the insurance plans for both union and non-union positions.
- Medical, dental, and vision insurance. This category of insurance involves a Company cost net of employee contributions. The costs and contributions vary by plan type (e.g. family, employee, or employee plus spouse). Costs and contributions are calculated on a position-by-position basis, taking into account actual employee plan selections, using actual premium rates for 2025 and then increased using a 3-year weighted average of insurance increases, 5.32%.

The forecasted test period group insurance expense can be found in Exhibit 37, Schedules C, D and G.

C. Other Benefits

Q. Please describe the components of Other Benefits expense.

A. Other Benefits expense includes savings programs such as 401k, the Defined Contribution Plan ("DCP"), Retiree Medical and the Employee Stock Purchase Plan ("ESPP"). It also includes other employee-related costs such as tuition assistance and training. The 401k, DCP, Retiree Medical, and ESPP costs were calculated on a position-by-position basis.

Q. How was the Other Benefits expense calculated?

A. Following a methodology similar to labor, each employee's gross benefits costs are multiplied by their Water Percentage and O&M Percentage to arrive at Water O&M-related expense for each employee. The calculations are described in further detail below. The forecasted test period expense for each can be found in Exhibit 37, Schedules C, D and G.

401k - Kentucky-American incurs 401k expense when it matches employee contributions to 401k retirement accounts. The matching amounts are determined by each employee's benefit group or hire date. For union employees hired before 2001 and non-union employees hired before 2006, the Company matches 50% of the first 5% of the employee's contribution (for a maximum of 2.5%). For the remaining employees, the Company matches 100% of the first 3%, and 50% of the next 2% of the employee's contributions (for a maximum of 4%). Pro forma 401k costs were calculated for each position based on forecasted test period wages, current employee contribution levels, and the level of match for the benefit group.

DCP – The Defined Contribution Plan is a retirement savings program for employees not eligible for the defined benefit pension program. Under the DCP, Kentucky-American contributes an amount equal to 5.25% of an employee's base pay into

a retirement account. The pro forma DCP expense was calculated by multiplying the forecasted test period regular time pay of each eligible position by 5.25%.

Retiree Medical Expense - Union employees who are not eligible for OPEBs are entitled to Company-provided retiree medical benefits. A trust (referred to as the Voluntary Employee Benefits Association, or "VEBA") exists to fund this benefit in the amount of $600 per eligible employee.

ESPP – Expense for the Employee Stock Purchase Plan relates to the Company funded discount on American Water stock purchases made by participating employees through voluntary payroll deductions. Under the ESPP, participants currently may purchase shares of American Water common stock at a 15% discount. Employees who choose to participate in a purchase period elect a contribution of 1% to 10% of after-tax compensation, for the discounted purchase of American Water common stock, subject to a maximum of $25,000 per year. The pro forma expense was calculated based on the forecasted test period base wages for each employee who participates in the ESPP, multiplied by their individual contribution amount, which was then multiplied to the 15% company discount to determine the adjustment.

Other Benefits – Various other expenses (e.g., training, tuition assistance, etc.) are forecasted based upon a three-year average (2022-2024) level of actual expenses.

D. Payroll Taxes

Q. Please discuss the general tax expense for payroll taxes.

A. Payroll taxes consist of federal and state taxes the Company pays based on its employees' salaries and wages. Taxes must be paid to fund the Federal Insurance Contributions Act, which is divided into two pieces: Old Age Survivors & Disability Insurance ("OASDI," or

more commonly "FICA"), and Hospital Insurance (or more commonly "FICA Medicare"). Payroll taxes must also be paid for Federal Unemployment Tax ("FUTA") and State Unemployment Tax ("SUTA").

Q. How were the forecasted test period payroll taxes calculated?

A. Forecasted test period payroll taxes were calculated on a position-by-position basis, using pro forma wages, ESPP contributions, and 2025 tax rates. Following a methodology similar to labor, each employee's gross payroll taxes are multiplied by their Water Percentage and O&M Percentage to arrive at Water O&M-related payroll tax expense for each employee. The pro forma payroll tax can be found in Exhibit 37, Schedules C, D and G.

E. Pension and OPEBs

Q. Please describe the Pension expense.

A. Generally, union employees hired before January 1, 2001, and non-union employees hired before January 1, 2006, are eligible for pension benefits. Pension expense is recorded according to Financial Accounting Standards Board ("FASB") Accounting Standards Codification Topic 715 or "ASC 715" (formerly Statement of Financial Accounting Standards 87).

Q. Please describe the adjustment to O&M for Pension expense.

A. ASC 715 cost is forecasted by the Company's professional third party actuary, Willis Towers Watson. As of January 2024, the annual service cost for Kentucky-American is $143,184. A portion of the service cost is capitalized according to the Company's pro forma capitalization percentage. The non-service costs for Kentucky-American are $116,134. The Company's pro forma cost for the twelve months ending December 31,

2026, was calculated by using the 2024 actuals after applying the capitalization percentage to the service costs.

Q. Please describe the OPEB expense.

A. OPEBs, such as retiree medical benefits, are offered to some Kentucky-American employees. Generally, this includes union employees hired before January 1, 2006, and non-union employees hired before January 1, 2002. OPEB expense is recorded according to ASC 715 (formerly Statement of Financial Accounting Standards 106).

Q. Please explain the adjustment to O&M for OPEB expense.

A. The OPEB cost is forecasted by the Company's professional third party actuary, Willis Towers Watson. As of January 2024, the annual service cost for Kentucky-American is $110,452. A portion of the service cost is capitalized according to the Company's pro forma capitalization percentage. The non-service costs for Kentucky-American are $(790,461). The Company's pro forma service cost for the twelve months ending December 31, 2026, was calculated by using the current 2024 actuals after applying the capitalization percentage to the service costs.

F. Production Expenses

Q. Please explain which operating expenses are considered production expenses.

A. Production expenses are those expenses that vary depending on the amount of water produced by the Company's treatment plants. These costs include purchased power and fuel, chemicals, waste disposal, and purchased water.

Q. Please explain the system delivery impact on production costs.

A. System delivery is the amount of treated water that the Company's treatment plants produce. Water sales as well as other factors impact the amount of water produced by the

plants, which in turn impacts expenses associated with treating that water. The Company has proposed pro forma sales adjustments in the direct testimony of Company witness McClellan. The Company's pro forma system delivery number was used in the projected expense calculation for fuel and power and chemicals.

Q. Please describe the Purchased Power expense.

A. Purchased power and fuel expense is composed of the energy costs associated with treating, pumping, and delivering water. Electrical costs are the driving force in this expense category as the costs for backup generator diesel fuel is minimal.

Q. Please explain how you calculated the Purchased Power expense.

A. To calculate the base period expense, the Company used actual fuel and purchased power invoices by vendor for the 6-month period ending February 2025 and included projected expense amounts for March 2025 through August 2025. To forecast purchased power expense for the forecasted test period of January 2026 through December 2026, the Company used the 12-month period ended February 2025 normalized expense and system delivery to calculate the expense per system delivery rate. This expense rate was then adjusted using a KAWC Purchased Power-specific growth factor. An adjustment was also made to account for the new ultraviolet ("UV") disinfection processes at two water treatment plants, which are highly power intensive processes. The forecasted test period fuel and power expense can be found on Exhibit 37, Schedules C and D. The forecasted test period fuel and power expense can be found on Exhibit 37, Schedules C and D.

Q. Why did the Company use a Purchased Power growth factor to calculate its forecasted Purchased Power expense?

A. PPL Corporation, the parent entity of Kentucky Utilities ("KU"), KAWC's largest power provider, has indicated that it expects to file a base rate case in the first half of 2025 to align with the expiration of KU's "stay-out" period on July 1, 2025.[2]

Q. How did the Company derive the Purchased Power growth factor used to calculate its Purchased Power expense?

A. The Company used the rate increase of 6.5% experienced from KU's last rate case in 2020 as its Purchased Power growth factor.

Q. Please describe the Chemical expense.

A. The Company uses various chemicals for water treatment purposes. The amount of chemicals utilized by the Company can vary depending on the season and other external factors.

Q. How did the Company forecast the Chemical expense?

A. To calculate the base period expense, the Company used actuals for chemical usage and related expense for the 6-month period ended February 2025 and included projected expense amounts for March 2025 through August 2025. To calculate the forecasted test period expense level for chemicals, the Company used a three-year average of the quantity for each chemical from the 12 months ended February 2022, 2023, and 2024, including adjustments based on operations experience. The Company then calculated usage per system delivery by dividing this normalized usage by the average system delivery for the same time period. This normalized usage per system delivery rate was applied to the anticipated system delivery for the forecasted test period ending December 31, 2026, to calculate the future test period usage. The Company used projected 2026 cost per chemical

[2] PPL Corporation, 4th Quarter 2024 Investor Update, February 13, 2025, page 7, https://filecache.investorroom.com/mr5ir_pplweb2/1187/PPL_2024_Q4_Investor_Update_Final.pdf.

for the forecasted test period. The 2026 projected chemical costs were projected using KAWC chemical contract data. These prices were applied to the forecasted test period usage to calculate the total expense. The forecasted test period chemical expense can be found in Exhibit 37, Schedules C and D.

Q. Please explain the Waste Disposal expense.

A. The Company incurs water waste disposal costs as a result of the need to beneficially reuse sludge and other by-products resulting from water treatment. The Company incurs monthly charges for chemical costs used in waste removal as well as a monthly accrual for anticipated costs associated with periodic cleaning of lagoons based on cycles that range from 12 to 24 months. The cleaning schedule is based on the amount of waste and size of lagoon, consistent with United States Environmental Protection Agency ("EPA") standards.

Q. Please describe how the Company calculated the Waste Disposal expense.

A. To calculate the base period Waste Disposal expense, the Company used actual waste disposal expenses for the 6-month period ended February 2025 and included projected expense amounts for March 2025 through August 2025. The forecasted test period of January 2026 through December 2026 includes accruals for the anticipated costs of cleaning the lagoons as well as chemical costs related to waste disposal. Adjustments include the normalization and annualization of 12 months of chemicals and cleanout expenses, as well as the removal of delayed accruals and non-recurring expenses. The forecasted test period waste disposal expense can be found on Exhibit 37, Schedules C and D.

Q. Please explain the Purchased Water expense.

A. The purchased water expense includes the costs for purchasing water from other utilities. The Company has water connections with seven neighboring utilities from which the Company can buy water: Jackson County Water Association, City of Livingston Municipal Water, City of Mt. Vernon Water Works, Carroll County Water District #1, Gallatin County Water District, City of Georgetown Municipal Utilities and City of Paris Water Works.

Q. Please explain how the Company calculated the Purchased Water expense.

A. To calculate the base period expense, the Company used actual purchased water expenses by vendor for the 6-month period ended February 2025 and included projected expenses for March 2025 through August 2025. The forecasted test period of January 2026 through December 2026 contains an adjustment to forecast expenses, based on a three-year average usage and current rates, and an adjustment to remove the purchase of water from City of Paris which is projected to cease in April 2025 due to the completion of a new water main project into the Millersburg system; the Millersburg Transmission Main project is discussed further by KAWC witness John Magner. The forecasted test period purchased water expense can be found on Exhibit 37, Schedules C and D.

G. Support Services

Q. What support services does Kentucky-American obtain from the Service Company?

A. Support provided by the Service Company includes customer service, water quality testing, innovation and environmental stewardship, human resources, communications, information technology, finance, accounting, payroll, tax, legal, engineering, accounts payable, supply chain, and risk management services. The Service Company's Customer

Service Organization ("CSO") handles customer calls, billing, and collection activities for the Company and its regulated utility affiliates. The CSO responds to customer inquiries and correspondence, and processes service order requests. In addition, the Service Company operates Field Resource Coordination Centers responsible for tracking and dispatching service orders for our field representatives and distribution crews. The Service Company also operates the Central Laboratory, located in Belleville, Illinois.

Q. How do Kentucky-American's customers benefit from Service Company's support?

A. The Service Company provides Kentucky-American with access to highly trained professionals who possess expertise in various specialized areas, whose background, experience and training are focused on water utility operations, and who exclusively support American Water's subsidiaries. Furthermore, the size of the Service Company and the scope of its operations have enabled it to assemble a uniquely qualified group of professionals who, through the Service Company, have a platform for sharing their extensive knowledge, expertise, experience and best practices across the American Water system to the benefit of all of American Water's state-regulated utilities and their customers. The Company benefits from the support and expertise of the Service Company's personnel at cost. The Company also benefits from the size and breadth of American Water, which affords the Company increased purchasing power that it could not obtain on its own and provides access to discounts on equipment and supplies needed for utility operations, including, for example, pipe, fittings, and water treatment chemicals. With Service Company's support, Kentucky-American achieves costs savings that it could not obtain individually otherwise.

Q. How are support services expenses charged to Kentucky-American?

A. Services are provided to Kentucky-American at cost and invoiced on a monthly basis. Support services expenses are charged to the Company in two ways: (1) directly to the Company at 100% of the cost; or (2) a percentage allocation based on factors such as a per customer allocation across the American Water regulated subsidiaries. The Direct Testimony of Company witness Michael Adams demonstrates the reasonableness of support services costs that are charged to the Company.

Q. How were the support services expenses calculated?

A. The expenses are categorized into labor & related, and other costs. A three-year average merit increase of 3.75% for non-union and actual contract rate increases for union employees is then applied to derive the 2026 labor expense levels. Certain other costs pertaining to lobbying, advertising, community relations, and charitable contributions have been removed from the base period expenses and therefore are not included in the pro forma expense. The expenses pertaining to severance have also been removed from the base period expenses. Additional adjustments were made to adjust the following expenses: pension and OPEB expense, employee transfers, National Association of Water Companies ("NAWC") expense, cyber incident, executive LTPP compensation, depreciation, KAWC O&M Growth Factor, and capital lease interest. Finally, a 0.06% allocation of sewer costs was removed from the end of the forecasted test year.

H. Insurance Other than Group ("IOTG")

Q. Please describe IOTG expense.

A. Kentucky-American incurs costs related to several types of IOTG insurance, including general liability, worker's compensation, auto liability, and property. The Company's

property insurance premiums are based on the total insured value of the Company's assets. The Company's general liability, Auto Liability, and worker's compensation premiums are based upon a combination of loss experience (50%) and exposure (50%). The loss experience is generally based upon a five-year average of historical loss experience. This five-year average is used to normalize losses in the event Kentucky-American suffers an anomalous year of claims. This is consistent with the commercial insurance market underwriting practice.

Q. Please describe the IOTG pro forma adjustments to operating expenses.

A. The majority of the Company's IOTG premiums renew on January 1 annually (Directors & Officers Liability, Crime, Employment Practices, Fiduciary, Lawyers and Travel insurances renew in April of each year, Aircraft Hull Liability-Drones insurance renews in September of each year). Development of the pro forma expense begins with the annual premiums as of 2025 for auto liability, general liability, worker's compensation, excess liability, and other insurances. Monthly pro forma amounts are then adjusted by applying specific policy escalation factors for each policy group at their corresponding renewal dates. The costs of the annual policies are allocated for water based on the water/wastewater customer count allocation percentage. The worker's compensation premiums are multiplied by the labor capitalization rate to eliminate the portion of that cost that would be capitalized.

I. Uncollectibles

Q. Please describe the Uncollectibles expense and associated adjustment.

A. Uncollectible expenses are those costs associated with bad debt. A forecasted uncollectible percentage of revenue was developed utilizing historical uncollectible dollars to revenue

ratio from 2022, 2023, and 2024 to determine an average uncollectible percentage. This percentage was then applied to pro forma revenue for the forecasted test period to arrive at the total uncollectible account expense. The forecasted test period uncollectible expense can be found in Exhibit 37, Schedules D-2.3.

J. Taxes Other than Income

Q. Please identify what is included in general tax ("taxes other than income").

A. General tax includes expenses incurred for property tax, payroll taxes, other taxes and licenses, and regulatory assessment fees. I will discuss the adjustments to property tax, other taxes and licenses, and regulatory assessment fees. Please refer to my aforementioned labor and labor related expenses testimony for a discussion of payroll taxes.

Q. Please describe the adjustments for property tax expense.

A. Property tax has two components, a county/city liability and a state liability. Both liabilities are calculated by multiplying tax rates by the assessed value of property. The adjustments to property tax expense include: (1) an adjustment related to the forecasted change in net water utility plant in-service ("UPIS") and forecasted change in property tax rates, where the forecasted change in net water UPIS is supported by Company witness DeGrazia, and the forecasted change in property tax rates was calculated using a four-year average of actual overall property tax rates from the final assessments for tax years 2020 to 2023 and applying an assumed 3 percent annual escalation, and (2) an adjustment to the state property tax rate applied to water pipeline property, where the adjustment to the state property tax rate applied to water pipeline property was calculated as the difference between the tangible personal property tax rate for state to the estimated effective state

property tax rate for all other property and multiplying that difference by the forecasted portion of net water UPIS that is assumed to be considered water pipeline property for state property tax purpose. The tangible personal property tax rate comes from the final assessment for tax year 2023 and has been constant for tax years 2019 to 2023. The estimated effective state property tax rate for all other property was calculated using a four-year average and applying an assumed 3 percent annual escalation. Consistent with the Company's treatment in its preceding general base rate case, the Company has considered the following utility plant accounts to be tangible personal property for property tax purposes: Utility Plant Accounts 309-Supply Mains, 330-Distribution Reservoirs and Standpipes, 331-Transmission and Distribution Mains, and 333-Services.[3]

Q. What is the Utility Regulatory Assessment tax in this case and how was it calculated?

A. This component of taxes other than income is also referred to as Utility Regulatory Assessment tax ("PSC Fee"). The Company has forecasted the PSC Fee for the forecasted test year by applying the current PSC Fee rate to the total forecasted revenues. The current PSC Fee rate was calculated using the Company's Annual Public Service Commission Assessment for the period July 1, 2024, to June 30, 2025.

Q. Are there any other adjustments to taxes other than income?

A. Yes. In addition to the adjustments to payroll tax as discussed in my labor and related testimony, and those discussed in this section, there exists an adjustment to remove the de minimis base period amounts of tax discounts and other taxes and licenses from the forecasted test year. This adjustment can be found in the Taxes & Licenses workpaper W/P 5-4.

[3] KAWC implemented this treatment pursuant to guidance provided by the Kentucky of Revenue on May 31, 2023, in advance of Case No. 2023-00191.

K. Contract Services

Q. Please describe Contract Services.

A. The contract services expense includes costs associated with snow removal, lawn mowing and landscaping, lab testing, accounting, audit and legal fees (other than those associated with a rate case proceeding), and other certain services that are performed by a contracted third party.

Q. Please describe the adjustment to Contract Services expense.

A. The adjustment for contract services is a KAWC 3-year average growth factor. The forecasted test year contract services expense can be found in Exhibit 37, Schedules C and D.

Q. Why did KAWC utilize a growth factor to forecast certain categories of expense?

A. KAWC developed an O&M Growth Factor in response to the Commission's directive to employ a forecasting methodology that is more reflective of Kentucky-American's experience than using general CPI inflationary factors.[4] KAWC used this O&M Growth Factor to forecast costs for the following categories of expense: Service Company (non-labor costs), Contracted Services, Building Maintenance and Services, Telecommunication, Office Supplies and Services, Employee Related, Miscellaneous, Rents, Customer Accounting, and Maintenance Supplies and Services.

Q. How was the KAWC O&M Growth Factor developed?

A. The KAWC O&M Growth Factor was determined by reviewing the Company's historical expense levels for years 2021-2024 for the above-named categories of expenses. These expenses were then totaled for each year, 2021-2024 to smooth outlier expense increases.

[4] *In re Kentucky American Water Company, Inc.*, Case No. 2023-00191 (Order, May 5, 2024), p. 18.

The total expense levels for 2021 through 2024 were then used to calculate the KAWC O&M Growth Factor of 5.16%.

L. Customer Accounting

Q. Please describe Customer Accounting.

A. The customer accounting expense includes costs associated with bank service charges, collection agencies, and other expenses associated with customer accounting and billing.

Q. Please describe the adjustment to Customer Accounting expense.

A. The adjustment for customer accounting is a KAWC 3-year average growth factor. The forecasted test year customer accounting expense can be found in Exhibit 37, Schedules C and D.

M. Employee Related Expense

Q. Please describe Employee Related expense.

A. The employee related expense includes costs associated with employee travel and relocation, such as meals, training and conference fees, and relocation fees.

Q. Please describe the adjustment to Employee Related expense.

A. The adjustments for Employee Related expenses include a normalization adjustment for relocation expense to bring the base year expense to the Company's 5-year average of relocation expense (2020-2024) and an adjustment for KAWC's 3-year average growth factor. The forecasted test year employee related expense can be found in Exhibit 37, Schedules C and D.

Q. Does this conclude your prepared direct testimony?

A. Yes, it does.

VERIFICATION

STATE OF KENTUCKY)
) SS:
COUNTY OF FAYETTE)

The undersigned, Robert Prendergast, being duly sworn, deposes and says that he is Senior Manager Regulatory Services for American Water Works Service Company, Inc., that he has personal knowledge of the matters set forth in the accompanying testimony for which he is identified as the responsible witness, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.

Robert Prendergast

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 8th day of May, 2025.

Molly McCleese Van Over
Notary Public

My Commission Expires:

July 31, 2025

Notary ID: KYNP26988

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-AMERICAN WATER COMPANY FOR AN ADJUSTMENT OF RATES	**)** **)** **)**	**CASE NO. 2025-00122**

DIRECT TESTIMONY OF LINDA SCHLESSMAN

May 16, 2025

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Linda Schlessman. My business address is 1 Water Street, Camden, NJ 08102.

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

A. I am employed by American Water Works Service Company, Inc. (the "Service Company") as the Director – Tax Regulatory. I am responsible for the oversight of calculating tax expense and accumulated deferred income taxes in rate cases and rate filings for American Water Works Company, Inc.'s ("AWWC") subsidiaries, including Kentucky-American Water Company ("KAWC" or the "Company").

Q. Please state your educational and professional background and state whether you are a member of any professional organizations.

A. I received a Bachelor of Business Administration Degree in Accounting from Miami University in 2006 and am a Certified Public Accountant in the State of Ohio. I have eighteen years of tax experience and six years of utility tax experience. Prior to joining American Water in September of 2024, I was a Tax Accounting and Regulatory Support Manager at American Electric Power, Inc. Prior to that, I held positions in both public accounting and the private sector. My previous employers include GBQ Partners, LLC, HBD Industries, Inc. and L Brands, Inc., now Bath and Body Works, Inc.

Q. Have you previously filed testimony before this Commission?

A. Yes. In my previous role at American Electric Power, Inc. as a Tax Accounting and Regulatory Support Manager I filed testimony before the Public Service Commission of Kentucky in Case No. 2023-00159.

Q. Have you previously filed testimony in regulatory proceedings outside of Kentucky?

A. Yes. At American Water I have filed testimony in rate proceedings before the Missouri Public Service Commission in Case No. WR-2024-0320, the Tennessee Public Utility Commission in Docket No. 24-00032, the Iowa Utilities Commission in Docket No. RPU-2024-0002, and the West Virginia Public Service Commission in Docket Nos. 25-0426-W-42T and 25-0428-S-42T. In addition to the Kentucky Case No. 2023-00159, while employed at American Electric Power, I filed testimony in rate proceedings before the Oklahoma Corporation Commission in Case No. PUD 2022-000093, before the Arkansas Public Service Commission in Case No. 23-012-FR, and before the Public Utility Commission of Texas in Docket No. 56165.

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

A. The purpose of my Direct Testimony is to support the Company income tax expense and Accumulated Deferred Income Tax ("ADIT") calculations and to explain the Corporate Alternative Minimum Tax ("CAMT").

Q. Are you sponsoring any Schedules or Exhibits in this proceeding?

A. Yes. I am sponsoring the following Schedules within Exhibit 37:

- Schedule E-1.1: Base Year Federal and State Taxes - Federal
- Schedule E-1.2: Base Year Federal and State Taxes – State
- Schedule E-1.3: Forecasted Year Federal and State Taxes – Federal
- Schedule E-1.4: Forecasted Year Federal and State Taxes – State
- Schedule E-1.5: Summary of Income Tax Adjustments
- Schedule E-2: Jurisdictional Factors for Income Tax Expense

II. INCOME TAX

Q. Please explain the Company's request for Income Tax Expense.

A. Schedule E-1.1 and E-1.2 calculates the current and deferred income expenses. Schedules E-1.3 and E-1.4 calculates the current and deferred income taxes at proposed rates. Current Tax Expense is calculated as pro forma Operating Revenues less pro forma Tax Deductions. The tax deductions include permanent, non-deductible items and temporary differences for book and tax depreciation differences, tax repairs, and other plant related adjustments. Deferred Tax Expense is equal to the temporary differences times the federal statutory tax rate of 21% and the state statutory rate of 5%. Deferred Tax Expense was also adjusted for the following amortizations: excess deferred tax liabilities under the Reverse South Georgia method, excess deferred taxes associated with the Tax Cut and Jobs Act, and flow through of income tax regulatory assets.

Q. Please explain the Company's request for Accumulated Deferred Income Taxes.

A. The Company included ($124,201,902) of accumulated deferred income taxes in its requested rate base in this case for the 13-month average forecasted period amount. This includes both the forecasted ADIT balance, as well as the forecasted balance of excess ADIT, which is a regulatory liability associated with changes in tax rates. The value of ADIT (including excess ADIT) in the Company's forecasted rate base is reflected on Exhibit 37, Schedules B-1, and B-6, which are sponsored by Company witness Dominic DeGrazia and are further discussed in his Direct Testimony.

III. CORPORATE ALTERNATIVE MINIMUM TAX

Q. What is the Inflation Reduction Act of 2022?

A. H.R. 5376, approved by Congress and signed into law on August 16, 2022, is referred to as the Inflation Reduction Act of 2022 or IRA. The stated purpose of the law was to curb inflation by reducing the deficit through the creation of significant changes relating to tax, climate change, energy, and health care.

Q. What tax change from the IRA will have an impact on the Company?

A. The Corporate Alternative Minimum Tax ("CAMT") was established for applicable corporations with adjusted financial statement income ("AFSI") above $1 billion. The IRA imposes a tax equal to the excess of 15% of the corporation's AFSI (tentative minimum tax) for the taxable year over its regular income tax liability.

Q. Is AWWC an applicable corporation?

A. Beginning with tax year 2024, AWWC is an applicable corporation. AWWC meets the AFSI test, which states that if a corporation's average annual AFSI exceeds $1 billion over the preceding three-year period, then the corporation and its subsidiaries are applicable corporations.

Q. For CAMT purposes, how is AFSI determined?

A. The starting point to calculate AFSI is the net income or loss per the financial statements. The financial statement net income or loss is then adjusted for federal income taxes, book and tax depreciation, pension, and other post-employment benefits. As a result, for purposes of determining AFSI or loss, federal income taxes, accelerated tax depreciation, pension, and other post-employment benefits are the same with respect to the regular federal income tax liability calculation.

Q. Why does AWWC's and KAWC's CAMT exceed the regular tax liability?

A. Under tax law, certain expenditures capitalized for financial statement purposes qualify for accelerated tax deductions, such as tax repairs. These accelerated tax deductions, which lower regular tax, are not included in the AFSI calculation for determining the CAMT liability. Therefore, the regular tax is below the CAMT tax liability.

Q. If KAWC is below the $1 billion threshold, why is KAWC subject to CAMT?

A. KAWC is a subsidiary of AWWC. Strictly for purposes of determining if AWWC exceeds the $1 billion threshold in average adjusted financial statement income under the AFSI test, AWWC must include all its subsidiaries, including KAWC, because AWWC is considered a "single employer group" under the applicable tax rules. As previously stated, the CAMT applies to "applicable corporations." If a "single employer group," in the aggregate, exceeds the $1 billion profits threshold, each corporation that is part of that "single employer group" is considered an "applicable corporation" and separately subject to CAMT. In addition, the applicable tax rules further support recording CAMT at the operating companies. That is illustrated by the fact that if a subsidiary ceases to be a member of an affiliated group of corporations, the departing subsidiary is entitled to its CAMT credit carryforward and can utilize that credit in future tax years when its regular tax exceeds its CAMT liability.

Q. How is KAWC expected to account for the CAMT in its financial statements?

A. For income tax accounting purposes, a current income tax liability and current income tax expense will be recorded for the CAMT liability but will be equally offset by recording a deferred tax asset and a reduction to deferred income tax expense to reflect the CAMT credit carryforward. As a result, there is no net incremental income tax expense associated

with the CAMT; however, a deferred tax asset is established for the minimum tax credit carryforward. Corporations are entitled to a tax credit equal to the amount by which the minimum tax liability exceeds the regular tax liability. This amount can be carried forward indefinitely and used in future years when the regular tax liability exceeds the CAMT liability.

Q. What are the rate-making impacts associated with CAMT?

A. Under the normalization method, for ratemaking purposes, accumulated deferred income taxes are a reduction to the rate base calculation to reflect the lower cost of capital attributable to accelerated tax benefits. However, the CAMT reduces the tax benefits associated with accelerated tax deductions. Therefore, a corresponding deferred tax asset is included as a rate base increase to reflect the appropriate cost of capital.

Q. Is the Company proposing to include a deferred tax asset for CAMT in this proceeding?

A. No. The Company has not included a deferred tax asset in rate base for CAMT in this proceeding because the portion of the deferred tax asset attributable to KAWC is currently recorded at the parent company level of AWWC. The expectation is that for the next proceeding a deferred tax asset for CAMT will be recorded on KAWC's books and included in rate base.

Q. Does this conclude your prepared direct testimony?

A. Yes, it does.

VERIFICATION

STATE OF KENTUCKY)
) **SS:**
COUNTY OF FAYETTE)

The undersigned, Linda Schlessman, being duly sworn, deposes and says that she is the Director – Tax Regulatory for American Water Works Service Company, Inc., that she has personal knowledge of the matters set forth in the accompanying testimony for which she is identified as the responsible witness, and that the answers contained therein are true and correct to the best of her information, knowledge and belief.

Linda Schlessman

Linda Schlessman

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 9th day of May, 2025.

Molly McCleese Van Over

Notary Public

My Commission Expires:

July 31, 2025

Notary ID: KYNP26988

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-AMERICAN WATER COMPANY FOR AN ADJUSTMENT OF RATES	**)** **)** **)**	**CASE NO. 2025-00122**

DIRECT TESTIMONY OF HAROLD WALKER, III

May 16, 2025

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and address.

A. My name is Harold Walker, III. My business address is 1010 Adams Avenue, Audubon, Pennsylvania, 19403.

Q. By whom are you employed?

A. I am employed by Gannett Fleming Valuation and Rate Consultants, LLC as Manager, Financial Studies.

Q. What is your educational background and employment experience?

A. My educational background, business experience and qualifications are attached hereto as Appendix A.

II. SCOPE OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to recommend appropriate cash working capital allowances for inclusion in Kentucky-American Water Company's (KAWC or the Company) rate base. My recommendations are based upon the results of a lead-lag study that was performed under my direct supervision.

Q. Have you prepared an exhibit presenting the results of your studies?

A. Yes. I have prepared Exhibit HW-1 which contains the 33 Schedules identified as Schedule HW-1 through Schedule HW-33 summarizing the Company's cash working capital claim in this proceeding.

III. SUMMARY OF WORKING CAPITAL CLAIM

Q. What are the components of the Company's working capital claims?

A. KAWC's working capital claim is comprised of cash (lead/lag), materials and supplies, and prepayments. My testimony presents the cash (lead/lag) component of the Company's

working capital claim. The materials and supplies element of KAWC's working capital claim are discussed in the Direct Testimony of KAWC witness DeGrazia and are shown as "Other Working Capital" on the Exhibit 37, Schedule B-1.

The cash component of the Company's working capital requirements is summarized on Schedule HW-1. Schedule HW-1 is the source information for the lead days and lag days data that is also shown on the Company's filing Exhibit 37, Schedule B-5.2, Working Capital - Lead/Lag Study. The Base Year at August 31, 2025 is shown on pages 1 through 3 of Schedule HW-1 ("Base Year Results") and the Forecast Year at December 31, 2026 is shown on pages 4 through 6 of Schedule HW-1 ("Forecast Year Results").

Q. What is the Company's cash component of their working capital requirement based on the Base Year Results?

A. As shown on page 1 of Schedule HW-1, the amount of working capital required to finance the recovery of the total operating funds based on the Base Year Results is $4,373,000.

Q. What is the Company's cash component of their working capital requirement based on the Forecast Year Results?

A. As shown on page 4 of Schedule HW-1, the amount of working capital required to finance the recovery of the total operating funds based on the Forecast Year Results is $2,788,000. This is shown as "Working Capital" on Exhibit 37, Schedule B-1.

IV. PRINCIPLES OF CASH WORKING CAPITAL

Q. What is cash working capital?

A. Cash working capital is the amount of funds necessary to finance the day-to-day operations of the Company.

Q. How is cash working capital treated for ratemaking purposes?

A. It is included in the determination of a utility's rate base.

Q. Why is cash working capital included as an element of rate base?

A. Cash working capital bridges the gap between the time when funds are provided to the Company by investors to allow the Company to provide service to customers, and the time revenues are received from customers as reimbursement for these services. Working capital is included in rate base to compensate investors for the use of their funds over and above their investment in plant, and to provide investors with a return on the funds required by the Company for daily operations.

Q. How was the cash working capital requirement determined?

A. I conducted a lead-lag study to determine the timing of KAWC's cash inflows and outflows and analyze the level of funding required to operate on a day-to-day basis. In Kentucky, a utility's cash working capital is measured by calculating: (1) the amount of time elapsed between when the Company provides a service to its customers and when the Company receives payments from its customers; and (2) the amount of time elapsed between when the Company receives goods and services and when the Company pays its suppliers for those goods and services. The difference between these two elapsed periods of time is known as the "net lag."

The net lag is multiplied by the average daily operating funds (cost of service or revenue requirement) to determine the cash working capital requirement.

Q. Please describe the components of a cash working capital analysis.

A. The two primary components of a cash working capital analysis are revenue lags and expense leads. The revenue lag is the elapsed time between the delivery of a company's

product to its customers and when a company receives payment for the delivery of the product. Investor-provided funds are required to keep a company running during the revenue lag time period, when the revenue stream is temporarily insufficient to finance daily operational needs.

The expense lead is the elapsed time between when a good or service is provided to a company and when a company pays its supplier for the good or service. During the expense lead time period, cash received from customers may temporarily exceed a company's payments to its suppliers for goods or services, and the excess may be used to repay investor-provided funds.

The net difference between the revenue lag and expense lead determines a company's cash working capital requirement.

Q. Generally speaking, how did you calculate the revenue lag?

A. The revenue lag is the sum of three distinct components: the service period lag, the billing lag, and the collection lag.

Q. What is the service period lag?

A. The service period lag is the average time between meter readings. The average, or mid-point, between meter readings, based on monthly meter readings, is roughly 15 days. The mid-point service period lag is produced by dividing the service period of roughly 30 days by two.

Q. What is the billing lag?

A. The billing lag is the time from the meter reading date to the date the customer is billed. On the customer billing date, the bill is mailed to the customer, and the total billing amount

for the cycle is recorded to KAWC's accounts receivable. The bills are prepared and mailed roughly 4 days after meters are read.

Q. What is the collection lag?

A. The collection lag is the average number of days from the date the bills are mailed to customers to the date payments are received by KAWC. This was determined by summing the daily accounts receivable balance during the 12 months ended December 31, 2024 and dividing by the sum of the daily receipts for the same period.

Q. Generally speaking, how did you calculate the expense lead?

A. The expense lead is the sum of two distinct components: the service lead and the payment lead. The service lead is the average time that a service or good was provided to the Company. If a service or good was provided for 20 days, the 20-day service period is divided by two to produce a midpoint of 10 days for the service period lead. The payment lead is the number of days from the end of the service period to the payment date for the service or good. If payment for the service or good was provided on the 30th day and the end of the service period was the 20th day, the payment lead is 10 days (30 days – 20 days). KAWC's expenses can be separated into five major sub-accounts: operating and maintenance expense, depreciation expense, taxes other than income taxes, income taxes, and after-tax operating income. In each of these sub-accounts, the lead days were calculated for each invoice or account by adding the midpoints of the service periods (the service lead) to the date the Company paid the invoices or accounts (the payment lead).

Q. Why are midpoints used in cash working capital analysis?

A. Midpoints are used to determine the average period during which a service or good is rendered or provided, prior to, or subsequent to, payment for the service. The midpoint

assumes that service is provided evenly over the service and payment period. For example, if a service is provided over a 30-day period, then on average, 30 days of service was provided evenly for 15 days (30÷2) of the service period. Mathematically, the midpoint is the weighted average number of days that the full service period number of days *(e.g.,* 30 days) was provided.

Q. What data set did you utilize in your lead-lag study?

A. The data sets were selected after developing an understanding of the Company's collections, payment policies, and procedures. I requested representative data sets from the Company. Once the requested raw data had been provided, data validation was performed by comparing an actual invoice or a bill with data from the utility's systems to ensure accuracy.

The revenue lag data set for the Company was based on an accounts receivable analysis of the beginning balance, the daily charges to this balance as bills were processed and mailed, and the daily receipts for all the days of the year during the 12 months ended December 31, 2024. The revenue lag data set for the Company also included an analysis of the cycle billing, the beginning and ending service dates (meter read dates), the total amount of billings (revenues), and the date bills were mailed (or posted).

The expense lead data set was based on information generated from the Company's central accounts payable system. The expense lead data sets for the 12 months ended December 31, 2024 were analyzed to develop the service beginning and ending dates, the amount purchased, and the date of payment. Generally speaking, sampling was randomly done for the invoices within each expense and tax category. In instances where there were large differences in the dollar amount of the invoices in a single expense category, sampling

was focused on the largest invoices within the expense category. For example, the larger electric accounts were sampled instead of the smaller electric accounts. The samples analyzed averaged 81% of the Company's total expense and tax dollars.[1]

Q. What time period does your lead-lag study encompass?

A. The lead-lag study in this case analyzed the net revenues and the associated net cost of service during the 12 months ended December 31, 2024, to derive the lag (lead) days. While the lead and lag days were calculated from December 31, 2024 overall per books results, the operating funds that they were applied to are for Base Year Results (Schedule HW-1, page 1) and Forecast Year Results (Schedule HW-1, page 4).

V. RESULTS OF THE LEAD-LAG STUDY

Q. What are the results of the lead-lag study?

A. Schedule HW-1 sets forth the results of the lead-lag study. The amount of working capital required to finance the recovery of the operating funds based on the Base Year Results shown on page 1 of Schedule HW-1 is $4,373,000. The amount of working capital required to finance the recovery of the operating funds based on the Forecast Year Results shown on page 4 of Schedule HW-1 is $2,788,000.

Q. Please describe the development of the Base Year's net interval days shown on page 1 of Schedule HW-1.

A. The net interval days (or net lag days) requirement is based on the net difference between the dollar weighted revenue lag days and the dollar weighted operating funds (or cost of service) lead days. The net interval days (or net lag days) calculation use revenue lag days

[1] Sampling for the total expense and tax dollars paid totaled 81% and reflected a range of sampling from 4% to over 100% of the total line-item dollars (or expenses). Sampling of total line-item dollars greater than 100% of the expense occurred for those line items which included the capital portion, employee contributions, or deferred amounts.

and the operating funds (or cost of service) lead days to determine the appropriate net lag day which was multiplied by the average operating funds (or cost of service) per day (*e.g.,* expenses / 365 days) line item. The product of multiplying the net interval days by the average daily operating funds produces the Company's Base Year working capital requirement.

The Company's revenue lag days for the receipt of the Base Year revenue is developed on page 3 of Schedule HW-1. The inputs to Company's revenue lag days were developed in the lead-lag study shown on Schedule HW-2. The lead days for the payments of the Base Year operating funds (or cost of service) are developed on page 2 of Schedule HW-1. The inputs to Company's operating funds (or cost of service) lead days were developed in the lead-lag study shown on Schedules HW-4 through HW-33 and the schedule references for the operating funds lead days for the operating funds (or cost of service) line items are shown on page 1 of HW-3.

Q. How was the Company's Forecast Year working capital requirement determined?

A. The Company's Forecast Year working capital requirement was determined on pages 4 through 6 of Schedule HW-1. The Company's Forecast Year working capital requirement was developed using the identical procedure described above for the Base Year working capital requirement.

Q. Please explain the procedures used to determine the revenue lag days.

A. Schedule HW-2 summarizes the development of the 39.1-day revenue lag days determined in the lead-lag study during the 12 months ended December 31, 2024. for revenue lag for the Company. Company. The Company's 39.1-day revenue lag is developed on page 1 of

Schedule HW-2. The revenue lags reflect the Company's service, billings, and collections frequencies.

Q. Please explain the procedures used to determine the service period and the billing lag days for customer revenues.

A. The lag days for the service period and the billing lag are developed on page 2 of Schedule HW-2. As mentioned previously, the service period lag was measured from the midpoint of the service period to the meter reading date, and the billing lag was measured from the meter reading date to the billing date.

A weighted average service period lag of 14.9 days is shown on page 2 of Schedule HW-2. KAWC's bills are prepared, mailed, and recorded to accounts receivable 4.4 days after meters are read. Adding the service period lag to the billing lag produces a combined 19.0-day service period and billing lag (14.9 days + 4.4 days = 19.0 days) as shown on page 2 of Schedule HW-2.

Q. Please describe the procedure used to calculate the collection lag.

A. As mentioned previously, the collection lag is the average number of days from the date the bills were mailed to the date payments are received and was determined by summing the daily accounts receivable balance during the test year and dividing by the sum of the daily test year receipts. This results in an average collection lag of 20.1 days as shown on page 3 of Schedule HW-2.

Q. Please summarize the total revenue lag.

A. The total revenue lag of 39.1 lag days is the result of adding the 19.0-day service period and billing lag and an average collection lag of 20.1 days as shown on page 1 of Schedule HW-2.

Q. Please explain the calculation of lead days for the operating funds or cost of service expenses shown on Schedule HW-1.

A. For each cost of service expense item that is shown, the lead days were calculated for each invoice or account based on the midpoints of the service periods to the dates the Company paid the invoices or accounts. Page 1 of Schedule HW-3 shows the schedule references for the operating funds or cost of service lead days for the Company.

Q. How were the lead days determined for the operating and maintenance expenses sub-account line items shown on Schedule HW-1?

A. For the operating and maintenance expense sub-accounts line items shown, the lead days were determined for each invoice or account sampled based on the midpoints of the service periods to the dates the Company paid the invoices or accounts. As explained previously, sampling was randomly done for the invoices within each expense and tax category.

For example, the weighted average lead days for fuel and power equal 24.2 days (see Schedule HW-5). The lead days for fuel, power and electric expenses were calculated for each invoice examined based on the midpoints of the service periods to the dates the Company paid the invoices. In total, 90% of the fuel, power and electric expenses were sampled. Similar analyses were conducted for salaries and wages (see Schedule HW-4), chemicals (see Schedule HW-6), purchased water (see Schedule HW-7), waste disposal (see Schedule HW-8), service company expense (see Schedule HW-9), contracted services (see Schedule HW-10), group insurance (see Schedule HW-11), OPEB (see Schedule HW-12), other benefits (see Schedule HW-13), pensions (see Schedule HW-14), insurance other than group (see Schedule HW-15), rents (see Schedule HW-16), maintenance service and supplies (see Schedule HW-17), office supplies and services (see Schedule HW-18),

employee related expense (see Schedule HW-19), building maintenance and services (see Schedule HW-20), postage printing and stationary (see Schedule HW-21), telecommunication (see Schedule HW-22), miscellaneous expense (see Schedule HW-23), transportation (see Schedule HW-24), and customer accounting (see Schedule HW-25). A zero lead has been assigned for regulatory expenses and amortization to recognize the full revenue lag related to these expenses. Similarly, for uncollectables expense, a zero lead has been assigned to recognize the full revenue lag related to this expense.[2]

Q. How were the lead days determined for the depreciation and amortization expense sub-account line items shown on Schedule HW-1item?

A. For the depreciation and amortization expense line item, a zero lead has been assigned because the full amount of the depreciation expense is deducted from rate base when the expense is recorded.

Q. Please explain in more detail why a zero lead day should be assigned to the depreciation and amortization line item?

A. A zero lag has been assigned because accumulated depreciation, the contra account for the depreciation expense, has been deducted from rate base. The accumulated depreciation account balance always includes an uncollected amount of depreciation expense that is equal to the revenue requirement lag days (i.e., 39.1 days). Assigning a zero lag recognizes that investor funding occurred but it has not yet been recovered from customers.

[2] In the Company's last rate application, in Case No. 2023-00191, the Commission excluded noncash items from the Company's lead/lag study based on recent Commission precedent. The Company's current lead/lag study includes noncash items because the noncash items represent 52% of their Net Operating Funds because Net Operating Funds represent the Company's cost of service or revenue requirement. The Company is impacted when noncash expenses are not paid for by customers. If noncash expense items are not considered a cash working capital requirement, then it implies a company is not impacted when they do not collect that portion of their cost of service comprised of noncash expenses. Obviously, the collection of the entire cost of service is essential to the operations of a company, otherwise noncash expenses would not be included in the determination of a company's cost of service.

Q. How were the lead days determined for the taxes other than income taxes sub-account line items shown on Schedule HW-1?

A. For most of the taxes other than income taxes sub-account line items shown, the lead days were calculated based on the midpoint of the tax liability period to the payment date, weighted by the actual amount paid. The exception to this was payroll taxes, where the lead days were calculated based on the midpoint of the tax liability period to the payment date. These tax sub-accounts are shown on Schedules HW-26 through HW-28. These taxes include property taxes (see Schedule HW-26), utility tax (see Schedule HW-27), and payroll taxes (see Schedule HW-28).

Q. How were the lead days determined for the income taxes sub-account line items shown on Schedule HW-1?

A. For the federal taxes (current) and state taxes (current) sub-account line items shown, the lead days were calculated based on the midpoint of the tax period to the payment date, weighted by the percent of the payment required. The derivation of the federal taxes (current) 30.3 lead days is shown on Schedule HW-29 and the derivation of the state taxes (current) 30.3 lead days is shown on Schedule HW-30.

A zero lead has been assigned for deferred taxes because they are deducted from rate base, as they are recorded as part of accumulated deferred taxes.

Q. Please explain in more detail why zero expense lead days should be assigned to the deferred taxes line item.

A. A zero lead has been assigned to deferred taxes because accumulated deferred taxes have been deducted from rate base as a source of cost-free funds. The deferred taxes account balance always includes an uncollected amount of deferred tax expense that is equal to the

revenue requirement lag days (*i.e.*, 39.1 days). Therefore, the recorded amount of accumulated deferred taxes deducted from rate base overstates the actual amount of available cost-free capital by an amount equal to the revenue requirement lag days. Assigning a zero lead recognizes that a portion of these cost-free funds have not been collected from customers. That is, KAWC collects cash associated with its deferred tax liability from customers in the same way it collects all other revenues – with a revenue lag of 39.1 days. Mathematically, the recorded amount of deferred taxes that is subtracted from rate base is overstated by a portion of the uncollected revenue requirement related to deferred taxes, because, like all other revenues, it is uncollected from customers for 39.1 days.

Q. How were the lead days determined for the after-tax operating income sub-account line items shown on Schedule HW-1?

A. For the interest expense sub-account line items, the lead days were calculated based on the midpoint of the interest period to the payment date. The derivation of the interest expense lead days is shown on Schedules HW-31 through HW-32 and the preferred stock expense lead days is shown on Schedule HW-33. I assigned a zero lead day to net income, or return on invested capital, because net income is the property of investors when it is earned. Further, net income is earned when service is provided. However, when service is provided, the net income is not collected simultaneously as is evidenced by the existence of the revenue requirement lag days. This situation is remedied by assigning a zero lead day to net income in recognition that these earnings have not been recovered from customers.

Q. Please summarize your determination of the working capital requirement shown on Schedule HW-1.

A. The amount of working capital required to finance the recovery of the total operating funds based on the Base Year Results is $4,373,000 as shown on page 1 of Schedule HW-1. The amount of working capital required to finance the recovery of the total operating funds based on the Forecast Year Results is $2,788,000, shown on page 4 of Schedule HW-1.

Q. Does this conclude your direct testimony?

A. Yes, it does.

VERIFICATION

STATE OF NEW JERSEY)
) **SS:**
COUNTY OF GLOUCESTER)

The undersigned, Harold Walker, III being duly sworn, deposes and says that he is the Manager Financial Studies for Gannett Fleming Valuation and Rate Consultants, LLC, that he has personal knowledge of the matters set forth in the accompanying testimony for which he is identified as the responsible witness, and that the answers contained therein are true and correct to the best of his information, knowledge, and belief.

Harold Walker, III

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 8 day of May, 2025.

Notary Public

My Commission Expires:

July 25, 2029

HEATHER L MARQUETTE
Notary Public, State of New Jersey
My Commission Expires 7/23/2029

Professional Qualifications

of

Harold Walker, III

Manager, Financial Studies

Gannett Fleming Valuation and Rate Consultants, LLC.

EDUCATION

Mr. Walker graduated from Pennsylvania State University in 1984 with a Bachelor of Science Degree in Finance. His studies concentrated on securities analysis and portfolio management with an emphasis on economics and quantitative business analysis. He has also completed the regulation and the rate-making process courses presented by the College of Business Administration and Economics Center for Public Utilities at New Mexico State University. Additionally, he has attended programs presented by The Institute of Chartered Financial Analysts (CFA).

Mr. Walker was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the Society of Utility and Regulatory Financial Analysts. This designation is based upon education, experience, and the successful completion of a comprehensive examination. He is also a member of the Society of Utility and Regulatory Financial Analysts (SURFA) and has attended numerous financial forums sponsored by the Society. The SURFA forums are recognized by the Association for Investment Management and Research (AIMR) and the National Association of State Boards of Accountancy for continuing education credits.

Mr. Walker obtained a license as a Municipal Advisor Representative (Series 50) by Municipal Securities Rulemaking Board (MSRB) and Financial Industry Regulatory Authority (FINRA).

BUSINESS EXPERIENCE

Prior to joining Gannett Fleming Valuation and Rate Consultants, LLC., Mr. Walker was employed by AUS Consultants - Utility Services. He held various positions during his eleven years with AUS, concluding his employment there as a Vice President. His duties included providing and supervising financial and economic studies on behalf of investor owned and municipally owned water, wastewater, electric, natural gas distribution and transmission, oil pipeline and telephone utilities as well as resource recovery companies.

In 1996, Mr. Walker joined Gannett Fleming Valuation and Rate Consultants, LLC. In his capacity as Manager, Financial Studies and for the past twenty-five years, he has continuously studied rates of return requirements for regulated firms. In this regard, he supervised the preparation of rate of return studies in connection with his testimony and in the past, for other individuals. He also assisted and/or developed dividend policy studies, nuclear prudence studies, calculated fixed charge rates for avoided costs involving cogeneration projects, financial decision studies for capital budgeting purposes and developed financial models for determining future capital requirements and the effect of those requirements on investors and ratepayers, valued utility property for acquisition and divestiture, and assisted in the private placement of fixed capital securities for public utilities.

Head, Gannett Fleming GASB 34 Task Force responsible for developing Governmental Accounting Standards Board (GASB) 34 services and educating Gannett Fleming personnel and Gannett Fleming clients on GASB 34 and how it may affect them. The GASB 34 related services include inventory of assets, valuation of assets, salvage estimation, annual depreciation rate determination, estimation of depreciation reserve, asset service life determination, asset condition assessment, condition assessment documentation, maintenance estimate for asset preservation, establishment of condition level index, geographic information system (GIS) and data management services, management discussion and analysis (MD&A) reporting, required supplemental information (RSI) reporting, auditor interface, and GASB 34 compliance review.

In 2004, Mr. Walker was elected to serve on the Board of Directors of SURFA. Previously, he served as an ex officio director as an advisor to SURFA's existing President. In 2000, Mr. Walker was elected President of SURFA for the 2001-2002 term. Prior to that, he was elected to serve on the Board of Directors of SURFA during the period 1997-1998 and 1999-2000. He also previously served on the Pennsylvania Municipal Authorities Association, Electric Deregulation Committee.

EXPERT TESTIMONY

Mr. Walker has submitted testimony or been deposed on several topics before regulatory commissions and courts in 29 states including: Alaska, Arizona, California, Colorado, Connecticut, Delaware, Hawaii, Idaho, Illinois, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, Nevada, New Jersey, New York, North Carolina, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, and West Virginia. His testimonies covered various subjects including lead-lag studies, fair rate of return, fair market value, the taking of natural resources, benchmarking, appropriate capital structure and fixed capital cost rates, depreciation, purchased water adjustments, synchronization of interest charges for income tax purposes, valuation, cash working capital, financial analyses of investment alternatives, and fair value. The following tabulation provides a listing of the electric power, natural gas distribution, telephone, wastewater, and water service utility cases in which he has been involved as a witness.

Client	Docket No.
Alpena Power Company	U-10020
Armstrong Telephone Company - Northern Division	92-0884-T-42T
Armstrong Telephone Company - Northern Division	95-0571-T-42T
Artesian Water Company, Inc.	90 10
Artesian Water Company, Inc.	06 158
Aqua Illinois Consolidated Water Divisions and Consolidated Sewer Divisions	11-0436
Aqua Illinois Hawthorn Woods Wastewater Division	07 0620/07 0621/08 0067
Aqua Illinois Hawthorn Woods Water Division	07 0620/07 0621/08 0067
Aqua Illinois Kankakee Water Division	10-0194
Aqua Illinois Kankakee Water Division	14-0419
Aqua Illinois Vermilion Division	07 0620/07 0621/08 0067
Aqua Illinois Willowbrook Wastewater Division	07 0620/07 0621/08 0067
Aqua Illinois Willowbrook Water Division	07 0620/07 0621/08 0067
Aqua Illinois, Inc.	24-0044
Aqua Pennsylvania, Inc	A-2022-3034143
Aqua Pennsylvania, Inc	R-2024-3047822

Aqua Pennsylvania, Inc	R-2024-3047824
Aqua Pennsylvania Wastewater Inc	A-2016-2580061
Aqua Pennsylvania Wastewater Inc	A-2017-2605434
Aqua Pennsylvania Wastewater Inc	A-2018-3001582
Aqua Pennsylvania Wastewater Inc	A-2019-3008491
Aqua Pennsylvania Wastewater Inc	A-2019-3009052
Aqua Pennsylvania Wastewater Inc	A-2019-3015173
Aqua Pennsylvania Wastewater Inc	A-2021-3024267
Aqua Pennsylvania Wastewater Inc	A-2021-3026132
Aqua Pennsylvania Wastewater Inc	A-2021-3027268
Aqua Pennsylvania Wastewater Inc	A-2023-3041695
Aqua Virginia - Alpha Water Corporation	Pue-2009-00059
Aqua Virginia - Blue Ridge Utility Company, Inc.	Pue-2009-00059
Aqua Virginia - Caroline Utilities, Inc. (Wastewater)	Pue-2009-00059
Aqua Virginia - Caroline Utilities, Inc. (Water)	Pue-2009-00059
Aqua Virginia - Earlysville Forest Water Company	Pue-2009-00059
Aqua Virginia - Heritage Homes of Virginia	Pue-2009-00059
Aqua Virginia - Indian River Water Company	Pue-2009-00059
Aqua Virginia - James River Service Corp.	Pue-2009-00059
Aqua Virginia - Lake Holiday Utilities, Inc. (Wastewater)	Pue-2009-00059
Aqua Virginia - Lake Holiday Utilities, Inc. (Water)	Pue-2009-00059
Aqua Virginia - Lake Monticello Services Co. (Wastewater)	Pue-2009-00059
Aqua Virginia - Lake Monticello Services Co. (Water)	Pue-2009-00059
Aqua Virginia - Lake Shawnee	Pue-2009-00059
Aqua Virginia - Land'or Utility Company (Wastewater)	Pue-2009-00059
Aqua Virginia - Land'or Utility Company (Water)	Pue-2009-00059
Aqua Virginia - Mountainview Water Company, Inc.	Pue-2009-00059
Aqua Virginia - Powhatan Water Works, Inc.	Pue-2009-00059
Aqua Virginia - Rainbow Forest Water Corporation	Pue-2009-00059
Aqua Virginia - Shawnee Land	Pue-2009-00059
Aqua Virginia - Sydnor Water Corporation	Pue-2009-00059
Aqua Virginia - Water Distributors, Inc.	Pue-2009-00059
Atlantic City Sewerage Company	WR21071006
Berkshire Gas Company	18-40

Berkshire Gas Company	22-20
Bermuda Water Company, Inc	W-01812A-22-0256
Borough of Brentwood	A-2021-3024058
Borough of Hanover	R-2009-2106908
Borough of Hanover	R-2012-2311725
Borough of Hanover	R-2014-242830
Borough of Hanover	R-2021-3026116
Borough of Hanover	P-2021-3026854
Borough of Royersford	A-2020-3019634
Butler Area Sewer Authority	A-2020-3019634
Chaparral City Water Company	W 02113a 04 0616
California-American Water Company	CIVCV156413
Citizens Utilities Company	
Colorado Gas Division	-
Citizens Utilities Company	
Vermont Electric Division	5426
Citizens Utilities Home Water Company	R 901664
Citizens Utilities Water Company	
of Pennsylvania	R 901663
City of Beaver Falls	A-2022-3033138
City of Bethlehem - Bureau of Water	R-00984375
City of Bethlehem - Bureau of Water	R 00072492
City of Bethlehem - Bureau of Water	R-2013-2390244
City of Bethlehem - Bureau of Water	R-2020-3020256
City of Dubois – Bureau of Water	R-2013-2350509
City of Dubois – Bureau of Water	R-2016-2554150
City of Lancaster Sewer Fund	R-00005109
City of Lancaster Sewer Fund	R-00049862
City of Lancaster Sewer Fund	R-2012-2310366
City of Lancaster Sewer Fund	R-2019-3010955
City of Lancaster Water Fund	R-00984567
City of Lancaster Water Fund	R-00016114
City of Lancaster Water Fund	R 00051167
City of Lancaster Water Fund	R-2010-2179103
City of Lancaster Water Fund	R-2014-2418872
City of Lancaster Water Fund	R-2021-3026682
City of Lancaster Water Fund	P-2022-3035591

Coastland Corporation	15-cvs-216
Commonwealth Edison Company	23-0728
Commonwealth Edison Company	24-0087
Commonwealth Edison Company	23-0064
Commonwealth Edison Company	24-0795
Community Utilities of Pennsylvania-Water	R-2023-3042804
Community Utilities of Pennsylvania-Wastewater	R-2023-3042805
Connecticut-American Water Company	99-08-32
Connecticut Water Company	06 07 08
Consumers Pennsylvania Water Company	
Roaring Creek Division	R-00973869
Consumers Pennsylvania Water Company	
Shenango Valley Division	R-00973972
Country Knolls Water Works, Inc.	90 W 0458
East Resources, Inc. - West Virginia Utility	06 0445 G 42T
Elizabeth Borough Municipal Authority	A-2025-3052983
Elizabethtown Water Company	WR06030257
ENSTAR Natural Gas Company	U-22-081
Falls Water Company, Inc.	FLS-W-23-01
Forest Park, Inc.	19-W-0168 & 19-W-0269
Hampton Water Works Company	DW 99-057
Hidden Valley Utility Services, LP	R-2018-3001306
Hidden Valley Utility Services, LP	R-2018-3001307
Illinois American Water Company	16-0093
Illinois American Water Company	22-0210
Illinois American Water Company	24-0097
Indian Rock Water Company	R-911971
Indiana Natural Gas Corporation	38891
Iowa American Water Company	RPU-2024-0002
Jamaica Water Supply Company	-
Kane Borough Authority	A-2019-3014248
Kentucky American Water Company, Inc.	2007 00134
Kentucky American Water Company, Inc.	2023-00191
Middlesex Water Company	WR 89030266J
Millcreek Township Water Authority	55 198 Y 00021 11
Missouri-American Water Company	WR 2000-281
Missouri-American Water Company	SR 2000-282

Missouri-American Water Company	WR-2022-0303
Missouri-American Water Company	SR-2022-0304
Missouri-American Water Company	WR-2024-0320
Missouri-American Water Company	SR-2024-0321
Mount Holly Water Company	WR06030257
Nevada Power Company d/b/a NV Energy	20-06003
Nevada Power Company d/b/a NV Energy	23-06007
New Jersey American Water Company	WR 89080702J
New Jersey American Water Company	WR 90090950J
New Jersey American Water Company	WR 03070511
New Jersey American Water Company	WR-06030257
New Jersey American Water Company	WR08010020
New Jersey American Water Company	WR10040260
New Jersey American Water Company	WR11070460
New Jersey American Water Company	WR15010035
New Jersey American Water Company	WR17090985
New Jersey American Water Company	WR19121516
New Jersey American Water Company	WR22010019
New Jersey American Water Company	WR24010056
New Jersey Natural Gas Company	GR19030420
New Jersey Natural Gas Company	GR21030679
New Jersey Natural Gas Company	GR24010071
Newtown Artesian Water Company	R-911977
Newtown Artesian Water Company	R-00943157
Newtown Artesian Water Company	R-2009-2117550
Newtown Artesian Water Company	R-2011-2230259
Newtown Artesian Water Company	R-2017-2624240
Newtown Artesian Water Company	R-2019-3006904
Newtown Artesian Water Company	R-2024-3050208
North Maine Utilities	14-0396
Northern Indiana Fuel & Light Company	38770
Oklahoma Natural Gas Company	PUD-940000477
Palmetto Utilities, Inc.	2020-281-S
Palmetto Wastewater Reclamation, LLC	2018-82-S
Pennichuck Water Works, Inc.	DW 04 048
Pennichuck Water Works, Inc.	DW 06 073
Pennichuck Water Works, Inc.	DW 08 073

Pennsylvania-American Water Company	A-2023-3039900
Pennsylvania Gas & Water Company (Gas)	R-891261
Pennsylvania Gas & Water Co. (Water)	R 901726
Pennsylvania Gas & Water Co. (Water)	R-911966
Pennsylvania Gas & Water Co. (Water)	R-22404
Pennsylvania Gas & Water Co. (Water)	R-00922482
Pennsylvania Gas & Water Co. (Water)	R-00932667
Philadelphia Gas Works	R-2020-3017206
Philadelphia Gas Works	R-2023-3037933
Public Service Company of North Carolina, Inc.	G-5, Sub 565
Public Service Electric and Gas Company	ER181010029
Public Service Electric and Gas Company	GR18010030
Presque Isle Harbor Water Company	U-9702
Sierra Pacific Power Company d/b/a NV Energy	19-06002
Sierra Pacific Power Company d/b/a NV Energy	22-06014
Sierra Pacific Power Company d/b/a NV Energy	24-02026
Sierra Pacific Power Company d/b/a NV Energy	24-02027
St. Louis County Water Company	WR-2000-844
Suez Water Delaware, Inc.	19-0615
Suez Water Idaho, Inc.	SUZ-W-20-02
Suez Water New Jersey, Inc.	WR18050593
Suez Water New Jersey, Inc.	WR20110729
Suez Water Owego-Nichols, Inc.	17-W-0528
Suez Water Pennsylvania, Inc.	R-2018-3000834
Suez Water Pennsylvania, Inc.	A-2018-3003519
Suez Water Pennsylvania, Inc.	A-2018-3003517
Suez Water Rhode Island, Inc.	Docket No. 4800
Suez Water Owego-Nichols, Inc.	19-W-0168 & 19-W-0269
Suez Water New York, Inc.	19-W-0168 & 19-W-0269
Suez Westchester, Inc.	19-W-0168 & 19-W-0269
Tennessee American Water Company	24-00032
Town of North East Water Fund	9190
Township of Exeter	A-2018-3004933
United Water New Rochelle	W-95-W-1168
United Water Toms River	WR-95050219
Upper Pottsgrove Township	A-2020-3021460
Valley Township (water)	A-2020-3019859

Valley Township (wastewater)	A-2020-3020178
Valley Water Systems, Inc.	06 10 07
Veolia Water Idaho, Inc.	VEO-W-22-02
Veolia Water Idaho, Inc.	VEO-W-24-01
Veolia Water Delaware, Inc.	23-0598
Veolia Water New Jersey, Inc.	WR23110790
Veolia Water New York, Inc.	23-W-0111
Veolia Water Pennsylvania, Inc.	R-2024-3045192
Veolia Water Pennsylvania, Inc.	R-2024-3045193
Virginia American Water Company	PUR-2018-00175
Virginia American Water Company	PUR-2021-00255
Virginia American Water Company	PUR-2023-00194
West Virginia-American Water Company	15-0676-W-42T
West Virginia-American Water Company	15-0675-S-42T
Wilmington Suburban Water Corporation	94-149
York Water Company	R-901813
York Water Company	R-922168
York Water Company	R-943053
York Water Company	R-963619
York Water Company	R-994605
York Water Company	R-00016236
Young Brothers, LLC	2019-0117

Exhibit HW-1

KENTUCKY AMERICAN WATER COMPANY, INC.

DOCKET NO. 2025-00122

TO ACCOMPANY THE DIRECT TESTIMONY OF

HAROLD WALKER, III

ON LEAD-LAG STUDY - WORKING CAPITAL

Lead-Lag Schedules

Schedule HW-1 Through Schedule HW-33

Kentucky-American Water Company

Calculation of Cash Working Capital Requirements
Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Index to Schedules

Kentucky-American Water Company
Supporting Calculations for Company's Exhibit 37, Schedule B-5.2
Summary of Base Year Working Capital - Lead-Lag Study
Base Year at August 31, 2025

Line No.	Description	Days	Amount
1			
2			
3	Total Operating Funds		$146,431,036
4			
5	Average Daily Operating Funds		401,181
6			
7	Composite Average Days Interval Between:		
8			
9	(A) Date Service Furnished and Date Collections Deposited	39.10	
10			
11	(B) Date Expenses Incurred and Date of Payment	28.20	
12			
13	(C) Net Interval	10.90	
14			
15	Total Working Capital		$4,372,873
16			
17			
18	Use		$4,373,000

Kentucky-American Water Company
Supporting Calculations for Company's Exhibit 37, Schedule B-5.2
Summary of Base Year Weighted Net Operating Funds Lead Days
Base Year at August 31, 2025

Line No.	Description	Amount	Post Payment or (Lead) Days	Dollar Days
1				
2				
3	Salaries & Wages	8,569,909	9.50	$81,414,137
4	Fuel, Power and Electric	5,763,835	24.20	139,484,802
5	Chemicals	4,604,448	33.20	152,867,657
6	Purchased Water	320,453	38.80	12,433,575
7	Waste Disposal	907,201	51.50	46,720,834
8	Service Company Charges	14,048,373	(4.20)	(59,003,166)
9	Contracted Services	1,617,183	50.70	81,991,193
10	Group Insurance	2,294,383	10.50	24,091,019
11	Opeb	(73,024)	64.50	(4,710,036)
12	Other Benefits	645,028	16.10	10,384,955
13	Pensions	190,054	(10.80)	(2,052,583)
14	Insurance Other than Group	1,830,557	(96.70)	(177,014,878)
15	Rents	62,234	(23.70)	(1,474,939)
16	Regulatory Expense	332,246	0.00	0
17	Maintenance Service & Supplies	1,349,688	15.70	21,190,109
18	Amortization	1,376,204	0.00	0
19	Uncollectibles	766,617	0.00	0
20	Office Supplies & Services	301,686	32.60	9,834,971
21	Employee Related Exp, Travel & Ent	195,344	35.50	6,934,706
22	Building Maintenance & Services	1,523,693	23.90	36,416,264
23	Postage Printing & Stationary	33,318	12.70	423,137
24	Telecommunication	304,973	41.10	12,534,397
25	Miscellaneous Expense	1,142,311	34.60	39,523,944
26	Transportation	524,821	53.30	27,972,978
27	Other Customer Accounting	112,416	56.20	6,317,772
28	Total O & M Expenses	48,743,951		466,280,848
29				
30	Depreciation and Amortization	29,749,437	0.00	0
31	Property Taxes	8,386,805	299.80	2,514,364,208
32	Utility Tax	177,580	(186.00)	(33,029,824)
33	Payroll Taxes	723,454	9.50	6,872,811
34	Income Taxes - Current - SIT	95,314	30.30	2,888,003
35	Income Taxes - Current - FIT	1,025,369	30.30	31,068,678
36	Deferred Income Taxes	7,744,383	0.00	0
37	Interest Expense - Long - Term Debt	12,699,225	89.40	1,135,310,715
38	Interest Expense - Short - Term Debt	290,438	10.30	2,991,516
39	Preferred Dividends	190,575	15.80	3,011,085
40	Net Income	36,604,505	0.00	0
41				
42	Net Operating Funds	$146,431,036		$4,129,758,040
43				
44				
45	Average Days Interval between Date Expenses are Incurred and Date of Payment			28.20

Kentucky-American Water Company
Supporting Calculations for Company's Exhibit 37, Schedule B-5.2
Summary of Base Year Weighted Revenue Lag Days
Base Year at August 31, 2025

Line No.		Revenues Amount	Median Service Days	Dollar Days
1				
2				
3	Monthly - Arrears Full Bills	$127,292,784	14.90	$1,896,662,479
4				
5	Other Revenues	2,151,028	14.90	32,050,316
6				
7	Fire Service	10,220,835	14.90	152,290,436
8				
9	Total	139,664,646		$2,081,003,231
10				
11				
12				
13				
14				
15				
16				
17				
18				
19	Average Median Service Days		14.90	
20				
21	Number of Days between the Reading Date and the			
22	Billing Date		4.10	
23				
24	Number of Days between the Billing Date and the			
25	Date the Bills are Paid		20.10	
26				
27	Total Average Days' Interval between Number of Days			
28	from Date Services are Furnished to Date Collections			
29	are Received		39.10	

Kentucky-American Water Company
Supporting Calculations for Company's Exhibit 37, Schedule B-5.2
Summary of Forecast Year Working Capital - Lead-Lag Study
Forecast Year at December 31, 2026

Line No.	Description	Days	Amount
1			
2			
3	Total Operating Funds		$163,328,636
4			
5	Average Daily Operating Funds		447,476
6			
7	Composite Average Days Interval Between:		
8			
9	(A) Date Service Furnished and Date Collections Deposited	39.10	
10			
11	(B) Date Expenses Incurred and Date of Payment	32.87	
12			
13	(C) Net Interval	6.23	
14			
15	Total Working Capital		$2,787,775
16			
17			
18	Use		$2,788,000

Kentucky-American Water Company
Supporting Calculations for Company's Exhibit 37, Schedule B-5.2
Summary of Forecast Year Weighted Net Operating Funds Lead Days
Forecast Year at December 31, 2026

Line No.	DESCRIPTION	Amount	Post Payment or (Lead) Days	Dollar Days
1				
2				
3	Salaries & Wages	9,528,061	9.50	90,516,580
4	Fuel, Power and Electric	6,040,520	24.20	146,180,584
5	Chemicals	4,632,446	33.20	153,797,191
6	Purchased Water	201,875	38.80	7,832,763
7	Waste Disposal	714,836	51.50	36,814,058
8	Service Company Charges	14,821,708	(4.20)	(62,251,172)
9	Contracted Services	1,728,444	50.70	87,632,101
10	Group Insurance	1,923,171	10.50	20,193,296
11	Opeb	(727,095)	64.50	(46,897,628)
12	Other Benefits	811,569	16.10	13,066,268
13	Pensions	198,279	(10.80)	(2,141,412)
14	Insurance Other than Group	2,063,676	(96.70)	(199,557,486)
15	Rents	66,516	(23.70)	(1,576,429)
16	Regulatory Expense	941,449	0.00	0
17	Maintenance Service & Supplies	1,628,939	15.70	25,574,347
18	Amortization	1,362,695	0.00	0
19	Uncollectibles	626,717	0.00	0
20	Office Supplies & Services	342,626	32.60	11,169,616
21	Employee Related Exp, Travel & Ent	236,418	35.50	8,392,839
22	Building Maintenance & Services	1,628,524	23.90	38,921,723
23	Postage Printing & Stationary	46,859	12.70	595,113
24	Telecommunication	325,955	41.10	13,396,751
25	Miscellaneous Expense	1,161,822	34.60	40,199,035
26	Transportation	600,763	53.30	32,020,650
27	Other Customer Accounting	120,150	56.20	6,752,430
28	Total O & M Expenses	51,026,924		420,631,218
29				
30	Depreciation and Amortization	35,067,695	0.00	0
31	Property Taxes	11,940,916	299.80	3,579,886,617
32	Utility Tax	212,214	(186.00)	(39,471,804)
33	Payroll Taxes	708,794	9.50	6,733,543
34	Income Taxes - Current - SIT	478,685	30.30	14,504,153
35	Income Taxes - Current - FIT	2,545,779	30.30	77,137,106
36	Deferred Income Taxes	8,340,184	0.00	0
37	Interest Expense - Long - Term Debt	14,566,932	89.40	1,302,283,721
38	Interest Expense - Short - Term Debt	337,197	10.30	3,473,129
39	Preferred Dividends	202,318	15.80	3,196,624
40	Net Income	37,900,998	0.00	0
41				
42	Net Operating Funds	$163,328,636		$5,368,374,307
43				
44				
45	Average Days Interval between Date Expenses are Incurred and Date of Payment			32.87

Kentucky-American Water Company
Supporting Calculations for Company's Exhibit 37, Schedule B-5.2
Summary of Forecast Year Weighted Revenue Lag Days
Forecast Year at December 31, 2026

Line No.		Revenues Amount	Median Service Days	Dollar Days
1				
2				
3	Monthly - Arrears Full Bills	$147,885,543	14.90	$2,203,494,586
4				
5	Other Revenues	2,435,111	14.90	$36,283,147
6				
7	Fire Service	13,175,537	14.90	196,315,508
8				
9	Total	$163,496,191		$2,436,093,241
10				
11				
12				
13				
14				
15				
16				
17				
18				
19	Average Median Service Days		14.90	
20				
21	Number of Days between the Reading Date and the			
22	Billing Date		4.10	
23				
24	Number of Days between the Billing Date and the			
25	Date the Bills are Paid		20.10	
26				
27	Total Average Days' Interval between Number of Days			
28	from Date Services are Furnished to Date Collections			
29	are Received		39.10	
30				
31				
32				
33				
34				
35				
36				
37				

Kentucky-American Water Company
Calculation of Total Revenue Lag Days
Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Description		Total Company
Service Period & Billing Lag Days: (From mid-point of service period to A/R Posting Date. See page 2 of this Schedule)		19.0
Collection Lag: (Sum of daily accounts receivable balance divided by the sum of daily receipts. See page 3 of this Schedule)	+	20.1
Total Revenue Lag Days		39.1

Kentucky-American Water Company

Calculation of Service Period and Billing Lag Days

Description	Total Company	Monthly - Arrears Full Bills	Other Revenues	Fire Service
Weighted Service Lag (November 2022)		$ 159,780,747		5,126,825
Billing Total (November 2022)		10,733,645		344,664
Service Lag Days	14.9	14.9	14.9	14.9
Weighted Billing Lag (November 2022)		43,773,602		1,460,196
Billing Total (November 2022)		10,733,645		344,664
Billing Lag Days	4.1	4.1	4.1	4.2
Service Period & Billing Lag Days:	19.0			
Test Year Revenues	$ 125,615,597	$ 114,580,142	$ 2,231,179	$ 8,804,276

Kentucky-American Water Company

Calculation of Collection Lag Days

Description		Total Company
Sum of Daily Accounts Receivable Balance in a Year	$	2,444,473,351
Divided By the Sum of Daily Test Year Billed Revenues	÷	121,716,074
Total Service Period Collection Lag Days		20.1

Kentucky-American Water Company
Summary of Operating Funds Lead Days
Determined in the Lead-Lag Study For the Twelve Months Ended December 31, 2024

Description	Schedule Reference	Amount	Weighted Amount	Lead Days
(1)	(2)	(3)	(4)	(5)=(4)/(3)
Operating Funds*				
Salaries and Wages	Schedule HW-4	7,613,401	72,327,314	9.5
Fuel, Power and Electric	Schedule HW-5	5,006,752	121,257,703	24.2
Chemicals	Schedule HW-6	3,990,588	132,551,233	33.2
Purchased Water	Schedule HW-7	335,880	13,017,118	38.8
Waste Disposal	Schedule HW-8	481,445	24,811,036	51.5
Service Company Expense	Schedule HW-9	12,932,891	(53,823,870)	(4.2)
Contracted Services	Schedule HW-10	758,415	38,416,072	50.7
Group Insurance	Schedule HW-11	3,199,183	33,591,423	10.5
OPEB	Schedule HW-12	58,000	3,741,000	64.5
Other Benefits	Schedule HW-13	919,484	14,762,855	16.1
Pensions	Schedule HW-14	479,600	(5,197,500)	(10.8)
Insurance Other than Group	Schedule HW-15	1,630,540	(157,671,281)	(96.7)
Rents	Schedule HW-16	38,068	(900,425)	(23.7)
Regulatory Expense**				0.0
Maintenance Service and Supplies	Schedule HW-17	122,371	1,922,830	15.7
Amortization**				0.0
Uncollectibles**				0.0
Office Supplies and Services	Schedule HW-18	29,639	966,112	32.6
Employee Related Expense	Schedule HW-19	90,798	3,226,130	35.5
Building Maintenance and Services	Schedule HW-20	364,715	8,699,997	23.9
Postage Printing and Stationary	Schedule HW-21	42,235	534,971	12.7
Telecommunication	Schedule HW-22	165,002	6,778,842	41.1
Miscellaneous Expense	Schedule HW-23	366,988	12,688,495	34.6
Transportation	Schedule HW-24	487,117	25,971,027	53.3
Customer Accounting	Schedule HW-25	97,605	5,485,783	56.2
Depreciation and Amortization**				0.0
Property Taxes	Schedule HW-26	5,306,797	1,591,016,809	299.8
Utility Tax	Schedule HW-27	177,479	(33,011,168)	(186.0)
Payroll Taxes	Schedule HW-28	1,003,649	9,534,669	9.5
State Income Taxes (Current)	Schedule HW-29			30.3
Federal Income Taxes (Current)	Schedule HW-30			30.3
Deferred Income Taxes**				0.0
Long-Term Debt Interest Expense	Schedule HW-31	11,389,681	1,018,741,786	89.4
Short-Term Debt Interest Expense	Schedule HW-32	434,122	4,473,154	10.3
Preferred Dividends	Schedule HW-33	190,575	3,001,556	15.8
Net Income**				0.0

* Lead days for expenses are calculated from the mid-point of the service period to the payment date. (See Schedules 4 - 33.)
** Lag days are assumed to be 0.

Kentucky-American Water Company
Operating Expenses & Taxes Sample Sizes Used In the
Lead-Lag Study For the Twelve Months Ended December 31, 2024

Description	Per Books	Sample Size	Percentage Sampled	
(1)	(2)	(3)	(4)=(3)/(2)	
Expenses & Taxes				
1. Salaries and Wages	$8,927,160	$7,613,401	85%	
2. Fuel, Power and Electric	5,588,737	5,006,752	90%	
3. Chemicals	4,665,560	3,990,588	86%	
4. Purchased Water	335,880	335,880	100%	
5. Waste Disposal	743,866	481,445	65%	
6. Service Company Expense	13,297,800	12,932,891	97%	
7. Contracted Services	1,998,778	758,415	38%	
8. Group Insurance	1,631,752	3,199,183	196%	(1)
9. OPEB	10,296	58,000	563%	(1)
10. Other Benefits	744,113	919,484	124%	(1)
11. Pensions	105,775	479,600	453%	(1)
12. Insurance Other than Group	1,705,513	1,630,540	96%	
13. Rents	59,169	38,068	64%	
14. Maintenance Service and Supplies	2,805,723	122,371	4%	
15. Office Supplies and Services	224,717	29,639	13%	
16. Employee Related Expense	122,389	90,798	74%	
17. Building Maintenance and Services	1,239,631	364,715	29%	
18. Postage Printing and Stationary	46,859	42,235	90%	
19. Telecommunication	356,283	165,002	46%	
20. Miscellaneous Expense	816,221	366,988	45%	
21. Transportation	556,975	487,117	87%	
22. Customer Accounting	103,899	97,605	94%	
23. Property Taxes	8,239,870	5,306,797	64%	
24. Utility Tax	160,421	177,479	111%	(2)
25. Payroll Taxes	627,000	1,003,649	160%	(1)
26. State Income Taxes (Current)	(371,134)	(371,134)	100%	
27. Federal Income Taxes (Current)	(1,047,917)	(1,047,917)	100%	
28. Long-Term Debt Interest Expense	12,089,458	11,389,681	94%	
29. Short-Term Debt Interest Expense	434,122	434,122	100%	
30. Preferred Dividends	190,575	190,575	100%	
	$66,409,491	$53,735,931 (3)	81%	(3)

Notes: (1) Sample amount is greater than 100% of expense because sampling excludes CAP credits.
(2) Sample amount is greater than 100% of expense because sampling based on cash payment, not accrual expense amount.
(3) Totals exclude subline expense items and sampled amount adjusted to 100% if the actual sampled amount was greater than 100%.

Kentucky-American Water Company

Calculation of Lead Days For Salaries and Wages

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Facts	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
All company employees are paid for a two week period (i.e., Days 1 through 14). Midpoint of the work period is 7.5 days. (7.5 = (1 + 14 = 15 ÷ 2 = 7.5).			
Pay date is five days following the end of the payroll period (i.e., Day 19, where 19 = 14 + 5).			
Third party vendor, ADP, receives funds 2 days before paydays (i.e., Day 17.0, where 17 = 19 - 2).			
Salaries and Wages Lead is 9.5 days Where Lead is calculated as 17.0 - 7.5 = 9.5			
Non-Union Salaries (5 days)	9.5	$3,428,860.02	$32,574,170.19
Union Labor (5 days)	9.5	4,184,541.46	39,753,143.87
Total Salaries and Wages	9.5	$7,613,401.48	$72,327,314.06

Kentucky-American Water Company

Calculation of Lead Days For Fuel, Power and Electric

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	22.9	$416,966.27	$9,556,830.47
February-24	25.1	180,838.88	4,540,269.69
March-24	21.1	711,324.68	14,985,164.87
April-24	23.8	441,375.65	10,519,187.18
May-24	23.0	430,539.71	9,885,633.95
June-24	23.4	31,365.61	734,343.66
July-24	27.9	875,494.55	24,455,174.78
August-24	21.8	495,725.85	10,805,189.58
September-24	27.2	136,133.21	3,706,623.37
October-24	24.6	440,502.64	10,847,526.47
November-24	25.2	422,708.97	10,651,759.62
December-24	24.9	423,776.43	10,569,998.97
Total Fuel, Power and Electric	24.2	$5,006,752.45	$121,257,702.57

Kentucky-American Water Company

Calculation of Lead Days For Chemicals

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	34.9	$178,070.03	$6,223,417.09
February-24	13.5	155,459.03	2,096,864.61
March-24	34.3	409,304.41	14,036,040.65
April-24	28.3	342,515.51	9,691,820.01
May-24	36.8	268,755.87	9,887,569.46
June-24	36.7	230,588.16	8,469,868.20
July-24	35.3	370,977.24	13,084,652.06
August-24	41.4	298,503.78	12,348,301.86
September-24	32.7	462,828.27	15,125,871.43
October-24	38.3	439,682.79	16,849,757.32
November-24	29.7	483,005.93	14,364,963.59
December-24	29.6	350,897.46	10,372,107.18
Total Chemicals	33.2	$3,990,588.48	$132,551,233.46

Kentucky-American Water Company

Calculation of Lead Days For Purchased Water

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	38.6	$26,695.90	$1,029,955.93
February-24	27.1	28,488.52	772,749.19
March-24	37.0	26,875.33	993,989.58
April-24	29.0	23,300.59	676,002.02
May-24	31.4	22,654.13	711,702.15
June-24	(11.7)	2,626.78	-30,842.64
July-24	45.7	52,102.15	2,382,225.27
August-24	37.5	32,664.17	1,225,281.84
September-24	43.7	25,929.48	1,134,072.23
October-24	46.6	30,316.23	1,413,476.10
November-24	48.2	31,467.98	1,517,618.96
December-24	36.4	32,758.91	1,190,887.73
Total Purchased Water	38.8	$335,880.17	$13,017,118.35

Kentucky-American Water Company

Calculation of Lead Days For Waste Disposal

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
May-24	58.0	$242,000.00	$14,036,000.00
October-24	45.0	104,078.04	4,683,511.80
November-24	45.0	135,367.20	6,091,524.00
Total Waste Disposal	51.5	$481,445.24	$24,811,035.80

Kentucky-American Water Company

Calculation of Lead Days For Service Company Expense

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	(5.0)	$1,113,738.19	-$5,568,690.95
February-24	(3.0)	982,018.18	-2,946,054.54
March-24	(4.0)	1,031,027.36	-4,124,109.44
April-24	(4.5)	1,217,724.43	-5,479,759.94
May-24	(7.0)	860,859.79	-6,026,018.53
June-24	9.5	984,691.49	9,354,569.16
July-24	(7.0)	1,392,440.75	-9,747,085.25
August-24	(11.0)	1,033,120.24	-11,364,322.64
September-24	(4.5)	1,080,993.06	-4,864,468.77
October-24	(7.0)	1,193,557.68	-8,354,903.76
November-24	6.5	1,015,251.15	6,599,132.48
December-24	(11.0)	1,027,468.88	-11,302,157.68
Total Service Company Expense	(4.2)	$12,932,891.20	-$53,823,869.87

Kentucky-American Water Company

Calculation of Lead Days For Contracted Services

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
March-24	23.7	$41,246.22	$977,401.14
April-24	38.3	137,760.17	5,270,660.89
May-24	45.0	2,167.91	97,555.95
June-24	55.0	51,195.08	2,814,631.48
July-24	54.5	58,168.64	3,173,078.85
August-24	53.9	55,104.06	2,968,307.69
September-24	53.2	96,219.07	5,119,082.95
October-24	63.9	114,892.10	7,337,104.91
November-24	68.1	103,466.13	7,050,276.53
December-24	36.7	98,196.02	3,607,972.09
Total Contracted Services	50.7	$758,415.40	$38,416,072.47

Kentucky-American Water Company

Calculation of Lead Days For Group Insurance

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	10.5	$250,530.58	$2,630,571.09
February-24	10.5	250,784.75	2,633,239.88
March-24	10.5	248,615.92	2,610,467.16
April-24	10.5	246,950.37	2,592,978.89
May-24	10.5	367,256.79	3,856,196.30
June-24	10.5	244,637.95	2,568,698.48
July-24	10.5	242,025.57	2,541,268.49
August-24	10.5	244,469.87	2,566,933.64
September-24	10.5	243,756.19	2,559,440.00
October-24	10.5	367,587.63	3,859,670.12
November-24	10.5	246,525.94	2,588,522.37
December-24	10.5	246,041.54	2,583,436.17
Total Group Insurance	10.5	$3,199,183.10	$33,591,422.55

Kentucky-American Water Company

Calculation of Lead Days For OPEB

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
September-24	64.5	$58,000.00	$3,741,000.00
Total OPEB	64.5	$58,000.00	$3,741,000.00

Kentucky-American Water Company

Calculation of Lead Days For Other Benefits

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	16.5	$106,037.55	$1,749,619.58
February-24	16.1	35,473.45	570,369.20
March-24	15.9	111,732.18	1,772,799.29
April-24	15.9	70,733.96	1,125,961.87
May-24	16.3	70,469.53	1,150,552.18
June-24	16.5	35,027.07	577,946.66
July-24	16.3	139,007.41	2,269,762.66
August-24	16.1	69,762.59	1,121,783.52
September-24	15.5	70,142.87	1,087,214.49
October-24	16.0	70,424.81	1,126,966.13
November-24	15.9	70,443.00	1,121,321.04
December-24	15.5	70,229.60	1,088,558.80
Total Other Benefits	16.1	$919,484.02	$14,762,855.38

Kentucky-American Water Company

Calculation of Lead Days For Pensions

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
February-24	(139.5)	$128,700.00	-$17,953,650.00
May-24	(48.5)	128,700.00	-6,241,950.00
August-24	37.5	111,100.00	4,166,250.00
November-24	133.5	111,100.00	14,831,850.00
Total Pensions	(10.8)	$479,600.00	-$5,197,500.00

Kentucky-American Water Company

Calculation of Lead Days For Insurance Other than Group

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	(126.8)	$798,011.91	-$101,183,806.23
March-24	(97.0)	13,194.97	-1,279,912.09
April-24	(111.3)	411,906.25	-45,846,798.50
May-24	(120.8)	33,726.46	-4,073,532.99
June-24	(28.0)	13,194.97	-369,459.16
July-24	(154.5)	50,869.34	-7,859,313.03
August-24	(8.5)	154,817.94	-1,315,952.49
December-24	27.5	154,817.94	4,257,493.35
Total Insurance Other than Group	(96.7)	$1,630,539.78	-$157,671,281.13

Kentucky-American Water Company

Calculation of Lead Days For Rents

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	14.0	$300.00	$4,200.00
February-24	112.5	278.12	31,288.50
March-24	112.0	4,247.37	475,862.76
April-24	(37.6)	10,098.38	-379,375.05
May-24	(138.2)	2,434.49	-336,528.85
June-24	(18.8)	1,790.63	-33,647.57
July-24	24.0	4,310.43	103,336.18
August-24	(122.4)	1,746.15	-213,722.10
September-24	(153.7)	2,291.08	-352,124.46
October-24	(194.3)	2,171.61	-421,985.18
November-24	54.7	6,424.50	351,526.38
December-24	(65.4)	1,974.90	-129,255.17
Total Rents	(23.7)	$38,067.66	-$900,424.56

Kentucky-American Water Company

Calculation of Lead Days For Maintenance Service and Supplies

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	22.9	$8,244.66	$188,961.56
February-24	5.1	18,157.15	91,884.47
March-24	14.0	$2,799.12	$39,187.68
April-24	17.6	4,491.09	79,261.15
May-24	11.0	420.90	4,629.90
June-24	20.7	17,731.18	366,889.16
August-24	13.0	26,778.38	348,118.94
September-24	19.2	14,778.64	284,348.72
October-24	22.7	18,513.90	419,869.78
November-24	9.6	10,082.80	96,322.00
December-24	9.0	372.96	3,356.64
Total Maintenance Service and Supplies	15.7	$122,370.78	$1,922,830.00

Kentucky-American Water Company

Calculation of Lead Days For Office Supplies and Services

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	49.0	$317.59	$15,561.91
February-24	35.0	7,170.18	250,927.54
March-24	28.8	6,886.57	198,668.45
April-24	26.4	2,714.03	71,697.35
May-24	25.9	1,595.74	41,353.96
June-24	43.3	1,542.04	66,803.79
July-24	53.1	324.36	17,213.23
August-24	30.5	1,462.30	44,637.03
September-24	54.4	611.65	33,253.34
October-24	26.8	1,432.87	38,421.55
November-24	39.4	3,159.14	124,548.51
December-24	26.0	2,422.09	63,024.87
Total Office Supplies and Services	32.6	$29,638.56	$966,111.53

Kentucky-American Water Company

Calculation of Lead Days For Employee Related Expense

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	32.9	$2,635.31	$86,583.16
February-24	29.4	1,771.63	52,089.72
March-24	50.8	5,570.13	282,850.52
April-24	38.4	6,556.52	251,745.00
May-24	35.4	4,887.55	172,813.99
June-24	41.9	7,268.85	304,247.67
July-24	45.0	3,990.15	179,373.29
August-24	28.1	10,543.21	296,078.45
September-24	27.3	16,203.32	442,146.31
October-24	40.2	12,969.15	521,247.66
November-24	36.4	7,955.83	289,786.00
December-24	33.2	10,445.97	347,168.30
Total Employee Related Expense	35.5	$90,797.62	$3,226,130.07

Kentucky-American Water Company

Calculation of Lead Days For Building Maintenance and Services

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
February-24	24.4	$17,077.56	$417,228.17
March-24	28.3	18,687.89	528,560.63
April-24	15.9	36,418.77	579,338.93
May-24	30.6	31,075.40	951,527.59
June-24	15.9	42,104.39	669,306.76
July-24	30.4	29,171.45	886,982.29
August-24	13.8	64,671.56	894,706.62
September-24	25.0	25,693.63	641,793.34
October-24	30.6	34,219.45	1,048,603.65
November-24	25.2	27,365.26	689,438.56
December-24	36.4	38,229.22	1,392,510.28
Total Building Maintenance and Services	23.9	$364,714.58	$8,699,996.82

Kentucky-American Water Company

Calculation of Lead Days For Postage Printing and Stationary

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	35.6	$406.19	$14,472.71
February-24	33.1	735.58	24,335.89
March-24	37.1	968.41	35,904.56
April-24	48.2	766.28	36,967.23
May-24	36.5	1,706.44	62,274.37
June-24	36.0	668.29	24,064.09
July-24	4.2	30,926.74	128,941.78
August-24	38.8	1,330.14	51,610.35
September-24	18.4	372.84	6,856.34
October-24	32.5	1,835.73	59,689.59
November-24	34.8	1,408.25	49,019.51
December-24	36.8	1,110.13	40,834.72
Total Postage Printing and Stationary	12.7	$42,235.02	$534,971.13

Kentucky-American Water Company

Calculation of Lead Days For Telecommunication

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	29.8	$13,982.96	$417,207.81
February-24	33.8	16,451.54	555,950.44
March-24	34.9	27,284.51	951,471.35
April-24	28.9	14,797.36	426,978.94
May-24	27.7	11,777.39	326,470.74
June-24	45.2	3,134.22	141,637.94
July-24	77.5	18,594.42	1,440,162.67
August-24	44.0	10,821.26	476,649.94
September-24	41.8	13,533.28	566,351.01
October-24	20.8	4,294.09	89,263.44
November-24	32.7	5,601.19	183,411.16
December-24	48.7	24,729.59	1,203,286.60
Total Telecommunication	41.1	$165,001.81	$6,778,842.03

Kentucky-American Water Company

Calculation of Lead Days For Miscellaneous Expense

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	28.0	$9,182.79	$257,213.07
February-24	31.5	26,034.49	819,393.24
March-24	41.8	22,914.45	956,889.56
April-24	5.1	55,937.22	284,976.49
May-24	25.8	13,363.15	345,160.30
June-24	39.4	23,939.67	942,649.34
July-24	43.9	16,415.55	720,190.32
August-24	33.2	59,440.51	1,975,278.18
September-24	50.3	9,265.96	465,653.94
October-24	34.4	18,716.99	643,186.18
November-24	48.8	63,797.12	3,114,069.70
December-24	45.1	47,979.71	2,163,834.97
Total Miscellaneous Expense	34.6	$366,987.61	$12,688,495.28

Kentucky-American Water Company

Calculation of Lead Days For Transportation

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	214.5	$62,064.34	$13,315,658.00
February-24	43.6	$49,582.38	$2,159,907.26
March-24	35.3	51,261.83	1,810,018.75
April-24	35.1	43,598.26	1,530,298.38
May-24	24.6	25,606.76	630,424.27
June-24	22.0	49,331.64	1,085,296.08
July-24	25.5	39,932.76	1,018,285.38
August-24	27.0	27,839.61	751,669.47
September-24	25.0	45,474.33	1,136,858.25
October-24	32.4	34,827.70	1,127,857.89
November-24	23.0	25,595.86	588,704.78
December-24	25.5	32,001.90	816,048.45
Total Transportation	53.3	$487,117.37	$25,971,026.96

Kentucky-American Water Company

Calculation of Lead Days For Customer Accounting

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	50.5	$6,154.65	$310,809.83
February-24	59.1	8,720.44	515,596.38
March-24	53.4	8,311.47	443,693.64
April-24	50.8	8,455.11	429,453.84
May-24	57.9	8,184.58	474,254.35
June-24	55.1	8,856.22	488,182.13
July-24	57.5	8,147.84	468,821.60
August-24	62.1	7,485.41	464,569.60
September-24	56.9	9,847.04	560,711.57
October-24	51.2	7,631.73	390,587.94
November-24	59.4	6,821.78	405,203.05
December-24	59.4	8,988.33	533,898.81
Total Customer Accounting	56.2	$97,604.60	$5,485,782.73

Kentucky-American Water Company

Calculation of Lead Days For Property Taxes

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
March-24	260.7	$644,579.32	$168,071,059.52
April-24	301.2	3,483,237.38	1,049,117,957.31
May-24	312.7	1,012,462.55	316,566,192.73
June-24	342.9	155,561.98	53,346,059.65
July-24	380.5	10,030.44	3,816,117.62
October-24	107.5	924.86	99,422.45
Total Property Taxes	299.8	$5,306,796.53	$1,591,016,809.28

Kentucky-American Water Company

Calculation of Lead Days For Utility Tax

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
June-24	(186.0)	$177,479.40	-$33,011,168.40
Total Utility Tax	(186.0)	$177,479.40	-$33,011,168.40

Kentucky-American Water Company

Calculation of Lead Days For Payroll Taxes

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Facts	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
All company employees are paid for a two week period (i.e., Days 1 through 14). Midpoint of the work period is 7.5 days. (7.5 = (1 + 14 = 15 ÷ 2 = 7.5).			
Pay date is five days following the end of the payroll period (i.e., Day 19, where 19 = 14 + 5).			
Third party vendor, ADP, receives funds 2 days before paydays (i.e., Day 17.0, where 17 = 19 - 2).			
Salaries and Wages Lead is 9.5 days Where Lead is calculated as 17.0 - 7.5 = 9.5			
FUTA	9.5	$6,585.38	$62,561.11
FICA	9.5	991,760.68	9,421,726.46
SUTA	9.5	5,303.36	50,381.92
Total Payroll Taxes	9.5	$1,003,649.42	$9,534,669.49

Kentucky-American Water Company

Calculation of Lead Days For State Income Taxes (Current)

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Service Period		Payment	(Lead)/		Weighted
From	To	Date	Lag Days	Amount	Amount
(1)	(2)	(3)	(4)	(5)	(6)
State Income Taxes (Current)					
1/1/24	12/31/24	3/15/24	(108.5)	25%	(27.1)
1/1/24	12/31/24	6/17/24	(14.5)	25%	(3.6)
1/1/24	12/31/24	9/16/24	76.5	25%	19.1
1/1/24	12/31/24	12/16/24	167.5	25%	41.9
Total State Income Taxes (Current)			30.3	100%	30.3

Kentucky-American Water Company

Calculation of Lead Days For Federal Income Taxes (Current)

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Service Period		Payment	(Lead)/		Weighted
From	To	Date	Lag Days	Amount	Amount
(1)	(2)	(3)	(4)	(5)	(6)
Federal Income Taxes (Current)					
1/1/24	12/31/24	3/15/24	(108.5)	25%	(27.1)
1/1/24	12/31/24	6/17/24	(14.5)	25%	(3.6)
1/1/24	12/31/24	9/16/24	76.5	25%	19.1
1/1/24	12/31/24	12/16/24	167.5	25%	41.9
Total Federal Income Taxes (Current)			30.3	100%	30.3

Kentucky-American Water Company

Calculation of Lead Days For Long-Term Debt Interest Expense

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
February-24	92.0	$268,125.00	$24,667,500.00
March-24	91.0	597,500.00	54,372,500.00
April-24	91.5	3,086,062.50	282,374,718.75
June-24	76.0	1,524,675.00	115,875,300.00
August-24	91.0	268,125.00	24,399,375.00
September-24	92.0	1,034,455.55	95,169,910.60
October-24	91.5	3,086,062.50	282,374,718.75
December-24	91.5	1,524,675.00	139,507,762.50
Total Long-Term Debt Interest Expense	89.4	$11,389,680.55	$1,018,741,785.60

Kentucky-American Water Company

Calculation of Lead Days For Short-Term Debt Interest Expense

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-24	15.0	$109,362.38	$1,640,435.70
February-24	1.0	66,137.72	64,097.04
March-24	13.0	94,717.33	1,231,325.29
April-24	14.5	70,987.34	1,029,316.43
May-24	15.0	27,108.25	406,623.75
June-24	(14.5)	29,703.79	-430,704.96
November-24	13.5	6,348.99	85,711.37
December-24	15.0	29,756.62	446,349.30
Total Short-Term Debt Interest Expense	10.3	$434,122.42	$4,473,153.92

Kentucky-American Water Company

Calculation of Lead Days For Preferred Dividends

Based on Lead-Lag Study For the Twelve Months Ended December 31, 2024

Month of Payment	Lead/ (Lag) Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
March-24	15.0	$47,643.75	$714,656.25
June-24	16.0	47,643.75	762,300.00
September-24	16.5	47,643.75	786,121.88
December-24	15.5	47,643.75	738,478.13
Total Preferred Dividends	15.8	$190,575.00	$3,001,556.25