BEFORE THE
STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES

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

BPU Docket No. WR2201____

Direct Testimony of

CHARLES B. REA

January 14, 2022

Exhibit P-8

NEW JERSEY-AMERICAN WATER COMPANY, INC.

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NEW JERSEY-AMERICAN WATER COMPANY, INC.

INTRODUCTION

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

A. My name is Charles B. Rea. My business address is 5201 Grand Avenue, Davenport, IA 52801.

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

A. I am employed by the American Water Works Service Company, Inc. ("AWWSC"). My title is Director, Rates & Regulatory.

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

A. My primary responsibility in my role as Director, Rates and Regulatory is to serve as a subject matter expert on cost of service, rate design, and revenue issues. I am responsible for the development and preparation of cost-of-service analyses and filings and associated rate design analyses, as well as presenting cost of service and rate design proposals to our internal and external stakeholders. In addition, I am responsible for revenue forecasting and the statistical analysis of customer usage for rate case purposes and I am the Company's subject matter expert on the analysis of the affordability of the Company's water and wastewater service to its customers.

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

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

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

A. Yes. I provided testimony regarding cost of service and rate design proposals for New Jersey-American Water Company, Inc. ("New Jersey-American," "NJAWC" or the "Company") in its previous base rate case, BPU Docket No. WR19121516 and for Virginia-American Water Company, Maryland-American Water Company, West Virginia-American Water Company, Iowa-American Water Company and Missouri-American Water Company and rate design proposals for Indiana-American Water Company. I also have testified on numerous occasions in Iowa, Illinois, and South Dakota on issues regarding energy efficiency and electric and natural gas cost of service and rate design.

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

A. I sponsor NJAWC's cost of service study and proposed rate design for both water and wastewater service and will provide calculations in support of the Company's proposed rates. I also testify on the Company's determination of revenues at the period ending March 31, 2023 ("Post-Test Year") at Present Rates and Proposed Rates. I further provide the Company's analysis of residential, commercial, and public authorities water consumption as it relates to the impact of the COVID-19 pandemic on water usage and long-term trends in water usage. Finally, I present the Company's affordability analyses for water and wastewater service.

7. Q. Are you sponsoring any schedules and/or exhibits in this proceeding.

A. Yes. I am sponsoring the following Company Schedules and Exhibits that are incorporated herein as part of my Direct Testimony.

- Schedule CBR-1: NJAWC Class Cost of Service Study
- Schedule CBR-2: NJAWC Residential Usage Analysis
- Schedule CBR-3: NJAWC Commercial Usage Analysis
- Schedule CBR-4: NJAWC Public Authorities Usage Analysis
- Schedule CBR-5: NJAWC Proposed Rate Design
- Schedule CBR-6: NJAWC Customer Impact Analysis
- Schedule CBR-7: NJAWC Water Service Affordability Analysis
- Schedule CBR-8: NJAWC Wastewater Service Affordability Analysis
- Exhibit P-2, Schedule 5 – Statement of Operating Revenue

8. Q. Were each of these Schedules prepared by you or under your direction and supervision?

A. Yes.

9. Q. How is your Direct Testimony organized?

A. My Direct Testimony is organized into the following seven (7) sections:

- Cost of Service
- Statistical Analysis of Customer Usage
- Declining Use and COVID-19 Adjustments for Customer Usage
- Revenues

- Water Rate Design
- Wastewater Rate Design
- Affordability

COST OF SERVICE

10. Q. What is a cost of service study?

A. A cost of service study is an analysis that calculates a utility's total investment and operating costs incurred to provide service to various customer groups, or service classes, for the purpose of establishing cost-based rates. The resulting cost determination process based on the allocation of costs to defined customer groups is called a cost of service study. Because the analysis is done by customer class, the study is often referred to as a "class cost of service study".

11. 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.

12. Q. Has the Company relied on the recommendations made in the AWWA M1 Manual in conducting its cost of service study 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 class cost of service study as I describe later in my Direct Testimony.

13. Q. Please describe the Company's cost of service study.

A. The Company's cost of service analysis allocates the total revenue requirement for NJAWC water operations to various cost categories listed below. The revenue requirement for each of these cost categories is then allocated to the various customer classes NJAWC 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:

- General Metered Service
- Option Industrial Wholesale
- Sales for Resale – Manasquan
- Sales for Resale – Commodity Demand
- Sales for Resale – Sales to Other Systems
- Private Fire
- Public Fire

Subject to the modification of the Base/Extra calculation I mentioned previously, 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 the primary criteria used in designing customer rates under the Company's proposed rate design to

produce the revenues that will yield the proposed revenue requirement in this case.

14. Q. How is the Company's cost of service study organized?

A. The Company's cost of service study attached hereto as Schedule CBR-1 is organized into five different tabs, or sections:

- The "Account Detail" tab contains rate base, depreciation, and operations and maintenance ("O&M") balances by account and allocates each account to cost category.
- 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 derive a total revenue requirement by class and business function. The "Summary" tab also compares the revenue requirements by customer class to Post-Test Year revenues under current rates;
- 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 cost of service study; and
- The "Allocation Summary" tab provides a summary of the class allocation factors.

15. Q. Is the Company's cost of service analysis performed on a district by district or on a consolidated statewide basis?

A. The Company's cost of service analysis is performed on a consolidated statewide basis.

16. 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 accounts are as follows:

- Variable Cost
- Capacity Cost
  - Source of Supply
  - Water Pumping
  - Water Treatment
  - Transmission Mains
  - Distribution Mains
  - Storage
- Metering Cost
- Service Line Costs
- Customer Service Costs
- Fire Hydrants

17. Q. Please describe how individual accounts that make up the Company's revenue requirement are assigned to a cost element.

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 Collecting and Impounding Reservoirs, Purchased Water for water pumping, and Water Treatment labor expenses. Accounts not directly assignable to a single cost category are allocated among cost elements 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.

A. VARIABLE COSTS

18. Q. Please describe what variable costs are and how variable costs are allocated to customer classes.

A. Variable costs refer to purchased electric power, purchased water, treatment chemicals and waste disposal costs. These are costs that tend to vary directly with the amount of water consumed and are allocated to customer classes in direct proportion to each class's annual water consumption.

B. CAPACITY COSTS

19. Q. Please describe what capacity costs are and how capacity costs are allocated to customer classes.

A. Capacity costs refer to the cost 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 but generally are allocated through a methodology known as the Base/Extra capacity method.

1. Base/Extra Capacity Methodology

20. Q. Please describe the Base/Extra capacity method as it is described in the AWWA M1 Manual.

A. The Base/Extra capacity method, as explained in detail in the AWWA M1 Manual, is generally accepted as a sound method for allocating the cost of water service and was used by the Company in previous cases. In short, the Base/Extra capacity methodology as described in the AWWA M1 Manual 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 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 groups.

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 (average daily system production divided by maximum day production), and the Extra component is weighted by one minus the system load factor.

21. Q. Please describe hoe the maximum daily consumption values for each class were estimated.

A. Maximum daily consumption values for each customer class are estimated based on daily and hourly consumption data collected via Advanced Metering Infrastructure ("AMI") meter data. For Sales for Resale customer classes, maximum daily consumption values are estimated based on AMI data collected for those customers where data exists, with estimated data used for resale customers where AMI data is not available. For other classes, maximum daily consumption is estimated based on samples of customers across the American Water footprint for which American Water has AMI data. Theses samples, which are selected by customer class and subgroups within each class, are selected such that the customers in each customer class sample have monthly usage characteristics that are nearly identical to monthly usage characteristics that NJAWC customers have and are expected to have during the Post-Test Year period (twelve-month period ending March 31, 2023), thus providing

consistency between the usage characteristics of the customers in each sample and the usage characteristics of NJAWC customers.

2. Source of Supply

22. 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 on the Modified Base/Extra methodology I have previously described.

23. Q. For purposes of allocating Source of Supply costs to customer classes, are all classes included in this allocation?

A. No, they are not. For the purpose of allocating Source of Supply costs, the Manasquan resale customer group is excluded from this allocation. Also, Source of Supply costs are not allocated to fire service classes. All of the Company's Manasquan Resale customers purchase their raw, or untreated, water directly from the New Jersey Water Supply Authority ("NJWSA") via long-term water purchase agreements. Since the NJWSA costs associated with the raw, or untreated, water are borne directly by the individual Manasquan Resale customers, these customers are not allocated our costs associated with Source of Supply. The Company's agreement with each of the Manasquan Resale customers is for the receipt, treatment and delivery of that raw, or untreated, water to their distribution systems. This has been part of the

Company's traditional rate design and cost of service for numerous past cases and is such again in this case.

3. Water Pumping Costs

24. Q. Please describe how water pumping costs are allocated to customer classes.

A. Similar to Source of Supply, water pumping costs not included in the variable cost section described above, are allocated to customer classes based on the Modified Base/Extra methodology with the Manasquan group included.

4. Water Treatment Costs

25. Q. Please describe how water treatment costs are allocated to customer classes.

A. Water treatment costs are allocated to customer classes based on the Modified Base/Extra capacity method. Water treatment costs are not allocated to fire service classes.

5. Transmission Mains

26. 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.

27. 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.

28. 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.

6. Distribution Mains

29. Q. Are distribution main costs allocated to all customer groups?

A. No. It is often the case that for large 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 performed to estimate the percentage of water sales served to that class directly from the transmission system. That portion of sales in each class 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 significantly different for different customer classes.

30. 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 varying 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. It is therefore appropriate to consider hourly consumption requirements for distribution mains allocation, as opposed to daily requirements.

31. Q. Aside from the differences between maximum *hourly* consumption and maximum *daily* consumption, does the Modified 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 Modified 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 maximum hourly

system consumption, and the Extra component is weighted by one minus the system load factor.

32. Q. Please describe how the maximum hourly consumption values are calculated.

A. Similar to the process used to estimate maximum daily consumption values by customer class, maximum hourly consumption values for each customer class are estimated either through direct AMI metering of NJAWC Sales for Resale customers or from samples of customers across the American Water footprint for which the Company has AMI data. The samples used to estimate maximum hourly consumption are the same samples used to estimate maximum daily consumption to ensure that there is consistency in usage patterns.

7. Storage Costs

33. Q. Please describe how the Company allocates the revenue requirements associated with storage costs to customer classes.

A. Storage costs are allocated to customer class based on the Modified 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.

C. CUSTOMER-RELATED COSTS

1. Metering Costs

34. Q. Please describe how the Company allocates the revenue requirements associated with the metering cost component to customer classes.

A. Metering costs are allocated to customer classes based on a weighted number of customers calculation. Customer weights in each class are based on AWWA standard meter equivalents by meter size. These ratios have been used in previous water class cost of service studies by NJAWC and the Company is not proposing to change the ratio of meter equivalencies by meter size in this case.

2. Service Costs

35. Q. Please describe how the Company allocates the revenue requirement associated with the service line cost component to each customer class.

A. Service line costs are allocated to customer classes based on a weighted number of customers calculation and are the same as those used in the last NJAWC water service rate case.

3. Customer Service Costs

36. Q. Please describe how the Company allocates the revenue requirement associated with the customer service cost component to customer classes.

A. Customer service costs are allocated to customer classes based on the total number of customers in each class.

D. FIRE SERVICE

37. Q. How are fire service requirements considered in the Company's cost of service analysis?

A. Fire service 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 provide service for general population levels. Given the population of the NJAWC service territory, a firefighting demand of 40,000 gallons per minute for ten hours was used in the Company's cost of service analysis, which is the same demand used in previous NJAWC cost of service studies. This firefighting demand was split between private fire and public fire customer classes 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.

E. OTHER ALLOCATION FACTORS

38. Q. How are Administrative & 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. Cash working capital is allocated based on total O&M expense.

39. 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 return. These factors are based on the result of allocating other costs and are computed internally in the cost allocation program.

40. Q. How are income taxes and 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.

41. Q. Please summarize the results of NJAWC's cost of service analysis.

A. The following table provides a summary of the Company's cost of service analysis and shows total Test Year (12 months ending June 30, 2022) and Post-Test Year revenues, cost of service, and the differences between the two by customer class:

NEW JERSEY-AMERICAN WATER COMPANY, INC.

Customer Class	Post Test-Year Revenue at Present Rates	Cost of Service	Difference
General Service	$635,258,655	$682,913,411	$29,654,756
Resale - Manasquan	$1,568,492	$2,143,901	$575,409
Resale – Commodity Demand	$19,524,406	$26,023,652	$6,449,246
Resale – Sales to Other Systems	$27,737,073	$38,828,857	$11,091,784
Optional Industrial Wholesale	$16,038,637	$20,335,743	$4,297,106
Private Fire	$26,815,521	$32,864,418	$6,084,897
Public Fire	$30,824,066	$53,978,461	$23,154,401
Total	**$775,766,850**	**$857,088,450**	**$81,321,599**

QUANTITATIVE STATISTICAL ANALYSIS OF WATER CONSUMPTION

42. Q. Are there revenue adjustments the Company is proposing in this case that require quantitative analysis of water consumption by New Jersey-American's water customers?

A. Yes. In the next section immediately following this section, I will discuss the development of the revenue projections for all customer classes (Residential, Commercial, Industrial, OPA, and Sales for Resale). In this section I will explain the modeling used to develop the revenue forecasts for the residential, commercial and OPA customers. For those customers, the Company is proposing adjustments for the normalization of the actual billing determinants for the 12-month period ended June 30, 2021, related to trends in declining use, weather normalization, and the impact of the COVID-19 public health emergency on water consumption for New Jersey-American's water customers. These adjustments 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 if weather was different from normal in the twelve month period ended June 30, 2021, and if so, a weather normalization adjustment to usage is appropriate to reflect more normal weather conditions for the twelve months ending June 30, 2022 ("Test Year"), and (3) if the COVID-19 public health emergency has had a significant impact on water consumption for New Jersey-American's customers, again to determine if a COVID-related adjustment to usage is appropriate for the Test Year.

43. Q. How do you determine the parameters and relationships necessary to analyze declining water use, weather impacts on water consumption, and the impact of COVID-19 on water consumption for the NJAWC's customers?

A. The parameters and relationships necessary to analyze declining use, weather, and COVID-19 on water consumption for NJAWC's customers are estimated through the use of statistical linear regression modeling.

44. Q. What is a statistical linear regression model?

A. Statistical linear regression modeling is a commonly used type of mathematical predictive analysis. The overall idea of regression modeling is to examine two things: (1) does a set of independent explanatory variables do a good job of predicting an outcome (dependent) variable, and (2) which independent explanatory variables, in particular, are significant predictors of the dependent

variable, and in what way do they help predict the results of the dependent variable.

There are three major uses for statistical linear regression analysis. These major uses are: (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 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?"

45. 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 x RAINn) + (a2 x CDDn) + (a3 x COVID-19n) + (a4 x TIMEn)

Where:	UPCn =	Use per customer in month n
	RAINn =	Rainfall in month n
	CDDn =	Cooling Degree Days ("CDD") 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 COVID-19 impact per customer
	a4 =	coefficient for TIME (declining use value)

In this example, use per customer is the dependent variable (outcome) and all other variables are independent variables (predictors).

46. 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 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.

47. 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 a3 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 from COVID-19 in that month. In all months prior to April 2020 that value was set at 0%. From April 2020 on, that value is set at 100% when maximum COVID-19 impacts are observed, or 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) normalize away the impact of COVID-19 in a manner similar to the weather normalization calculation previously described, and (2) reflect forecasts of future impacts of the COVID-19 public health emergency.

48. Q. Can these models be used to estimate trends in declining use per customer for different customer classes?

A. Yes. In the same statistical model example represented above, the a4 coefficient for TIME is the estimate of declining use per customer per month. This coefficient measures the rate of 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 that 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.

49. 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. The most 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) values and standard deviations for the coefficients, 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 from time period to time period 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 at all) to 100% (perfect explanatory

accuracy). In general, the higher the R-squared, the better the predictive value 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 measuring how many standard errors each coefficient is away from zero, which the model also calculates.

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.

50. 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 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 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 use to yield estimates consistent with that expectation.

DECLINING USE AND COVID-19 ADJUSTMENTS

51. Q. Please describe the statistical linear regression model you are using to analyze water consumption data for NJAWC.

A. In this case, we are using multiple regression statistical models for each customer class 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 October 2011 and running through September 2021. 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 precipitation. These weather variables are a weighted average of current month and lagged month weather readings taken by NOAA at selected weather reporting stations across the state of New Jersey. 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 weather over a ten-year period period from 2010 through 2019.

- **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 a variable set at 0% for months prior to April 2020 and varying levels of 0% to 100% for the months of April 2020 through September 2021 depending on the varying levels of COVID-19 impacts on water consumption observed in the residential and commercial customer classes. 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 September 2021 timeframe that may have happened due to systemic changes in the amounts of water customers use water 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.

52. Q. What information do these models provide that is useful for developing pro forma adjustments to revenues that you are sponsoring in your testimony?

A. Each model produces a set of weather coefficients that can be used to weather-normalize historical sales for the Test Year period, a coefficient that indicates the monthly trend in declining use per customer for each class, and a coefficient that shows for each class the average use per customer impact associated with changes in usage due to COVID-19.

53. Q. Where are your models presented?

A. My residential model is contained in Schedule CBR-2. My commercial model is contained in Schedule CBR-3, and the Public Authority model is in Schedule CBR-4.

54. Q. You previously discussed the various statistical tests used for accuracy and predictability. Please discuss the results of these tests for your residential and commercial model and why they are appropriate to use in this proceeding.

A. As shown in Schedules CBR-2, CBR-3 and CBR-4, the R-Squared statistic for the residential usage model is 96%, the R-Squared statistic for the commercial usage model is 92%, and the R-Squared statistic for the OPA model is 87%. This indicates that in all models, the explanatory variables (weather, COVID-19 impacts, declining use, etc.) do a very good job of explaining the variability in use per customer over time. The values of the coefficients, standard errors, and t-statistics for the major explanatory variables in the models are as follows:

NEW JERSEY-AMERICAN WATER COMPANY, INC.

Residential Model Major Explanatory Variables	Coefficient	Standard Error	t-Statistic
Declining Use Trend	-0.0059	0.0009	-6.3931
Precipitation	-0.3106	0.0287	-10.8206
CDD	0.0078	0.0011	7.0594
COVID-19 Impact	0.4588	0.0889	5.1629

Commercial Model Major Explanatory Variables	Coefficient	Standard Error	t-Statistic
Declining Use Trend	-0.0123	0.0057	-2.1732
Precipitation	-0.9455	0.1888	-5.0070
CDD	0.0294	0.0060	4.9086
COVID-19 Impact	-2.4164	0.5476	-4.4127

OPA Model Major Explanatory Variables	Coefficient	Standard Error	t-Statistic
Declining Use Trend	-0.0257	0.0088	-2.9123
Precipitation	-1.4721	0.2953	-4.9854
CDD	0.0387	0.0094	4.1277
COVID-19 Impact	-4.4395	0.8563	-5.1843

The statistics for the individual explanatory independent variables above show a high degree of explanatory power with t-statistics all outside of the +/- 2.00 range. Signs for the trend variables are both negative, meaning that usage has been going down steadily over time once weather effects and the effects of COVID-19 have been accounted for. The sign for the precipitation variable in the residential model is also negative as expected, meaning that more rainfall over a summer period results in less seasonal water usage from our residential customers. Signs for the CDD variables are positive meaning that the hotter the weather gets in the summer, customers use more water, which is expected, and the signs for the COVID-19 impact variables indicate that residential usage

went up as a result of COVID-19 and usage for commercial customers went down, which can plainly be seen in Charts 1-6 below in my Direct Testimony.

55. Q. You also mentioned that regression models must also pass common sense tests. Please describe the common sense tests which are satisfied by your regression models.

A. There are several. As I described earlier, we know that water usage accelerates in hot, dry summer weather. My models clearly pass that test. I have also proposed an adjustment for declining use for customers. Here, too, we know that declining water use per customer is a national trend as demonstrated further below. My adjustment is consistent with that trend.

56. Q. Your regression models also show a trend of declining use per customer. Why do you believe that declining use is a valid trend that will continue?

A. The residential consumption patterns for New Jersey-American are similar to those for other American Water state operating companies which have experienced a decline in residential consumption per customer averaging approximately -2.0% per year over the last 10 years. Commercial customers also show declining use per customer, although usually not of the same magnitude. This is not surprising because, according to the 2010 Water Research Foundation ("WRF") report, "many water utilities across the United States and elsewhere are experiencing declining water sales among

households."[1] The report further states: "A pervasive decline in household consumption has been determined at the national and regional levels.[2]

57. Q. What is causing the decline in residential and commercial customers' usage?

A. As I mentioned previously, we look to common sense answers to validate trends. Here, several factors explain and drive the decline in residential customers' usage. These factors include the incremental introduction of low-flow fixtures and appliances, laws and regulations that create and lead to further reductions in fixture flow-rates, conservation programs and public initiatives that have led to greater consumer water conservation awareness. Like the residential customer class, the commercial customers also avail themselves of more efficient fixtures and appliances.

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. This is equally true for commercial customers. Similarly, construction of new homes or business establishments

[1] Coomes, Paul et al., North America Residential Water Usage Trends Since 1992 – Project #4031, page 1 (Water Research Foundation, 2010).
[2] *Id*. at xxviii.

result in the installation of water efficient fixtures meeting new, more efficient, regulatory standards.

58. Q. How much water do the new fixtures and appliances save?

A. The Energy Policy Act of 1992 ("EPAct92") 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 ("USEPA") 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 ("EISA"), 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.

59. 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 or business water use habits in other various ways.

60. Q. Do you expect the customer declining usage trend 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 usage per customer. In fact, the trend is well established and continues to affect water usage on the NJAWC 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.

According to an AWWA Journal article dated February 2012, technology is now available for newer, more water efficient products that further improve on EPAct92 levels, and there is now a growing movement to codify these more stringent specifications. The introduction of progressive code modifications—

such as the International Code Council's ("ICC's") International Green Construction Code ("IGCC") and the International Association of Plumbing and Mechanical Officials ("IAPMO") Green Plumbing and Mechanical Code Supplement (2011) support uniform implementation of increased water efficiency standards. AWWA research also indicates that this decline in water consumption will continue. An article in the June 2012 issue of the AWWA Journal entitled "Insights into declining single-family residential water demands" states: "[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." [3]

61. Q. Is the decline in residential and commercial water consumption showing any signs of reaching equilibrium?

A. No. Many of the homes in NJAWC's service territory are older housing stock, built prior to 2000. These homes were constructed with toilets, washing machines, and dishwashers that are more water-intensive than newer fixtures and appliances now on the market. As turnover of household fixtures and appliances continues to occur over time, residential usage will continue to decline accordingly. The regulations mandating water efficient washing machines and dishwashers also are relatively new. Given the life expectancy of

[3] 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

appliances, it is likely that the replacement of existing appliances, and the corresponding reduction in water used, will continue to occur over time for the indefinite future.

62. Q. Based on your modeling, what impact did weather have on residential and commercial usage?

A. Weather (as defined by CDDs, and precipitation) in the NJAWC service territory was hotter and wetter than normal during the historic 12-month period ending June 2021, which indicates that a net positive adjustment to residential and commercial usage is appropriate. Rainfall was approximately 3.2 inches wetter than normal for the period and there were 105 more CDDs than normal during the period which in total had a net negative impact on usage. The adjustment the Company proposes for weather adds back usage for these classes to represent normal weather going forward. The following table shows the weather adjustment, in gallons per customer, the Company is proposing to bring usage levels for residential, commercial, and OPA customers more in line with normal weather for the Post-Test Year.

Weather Component	Residential	Commercial	OPA
Precipitation	996	3,059	4,763
Cooling Degree Days	-818	-2,904	-3,819
Total	**178**	**155**	**944**

63. Q. What impact did COVID-19 have on residential usage?

A. The COVID-19 public health emergency has had a significant impact on residential usage. Chart 1 and Chart 2 below show the impact that COVID-19

has had on residential usage. Chart 1 shows actual use per customer from January 2018 through March 2020 (pre-COVID-19) and then from April 2020 through September 2021. Chart 1 also contains baseline usage, or model-predicted usage, for the same time periods assuming no COVID-related impact. Chart 2 shows the differences between actuals and baseline usage (no COVID-19 impact) for the same periods with the chart in Chart 2 extending out through the end of the Test Year to provide context on the amount of time that remains for COVID-19 impacts to fully normalize.

The data shows that residential usage went up significantly in the Spring and Summer of 2020 due to the public health emergency. We estimate that the total COVID-19-related impact on residential use per customer during the 12 months ended June 30, 2021 was a positive 5,831 gallons per customer. The COVID-19-related impact on residential use per customer peaked in July 2020 at approximately 1,023 gallons per customer per month and has steadily abated since that time. Based on the continuing trend in the abatement of COVID-19-related impacts, we expect residential usage patterns to return to pre-COVID usage patterns during the Post Test-Year. As a result, the Company is proposing a negative corresponding adjustment to residential usage to account for COVID-19-related impacts.

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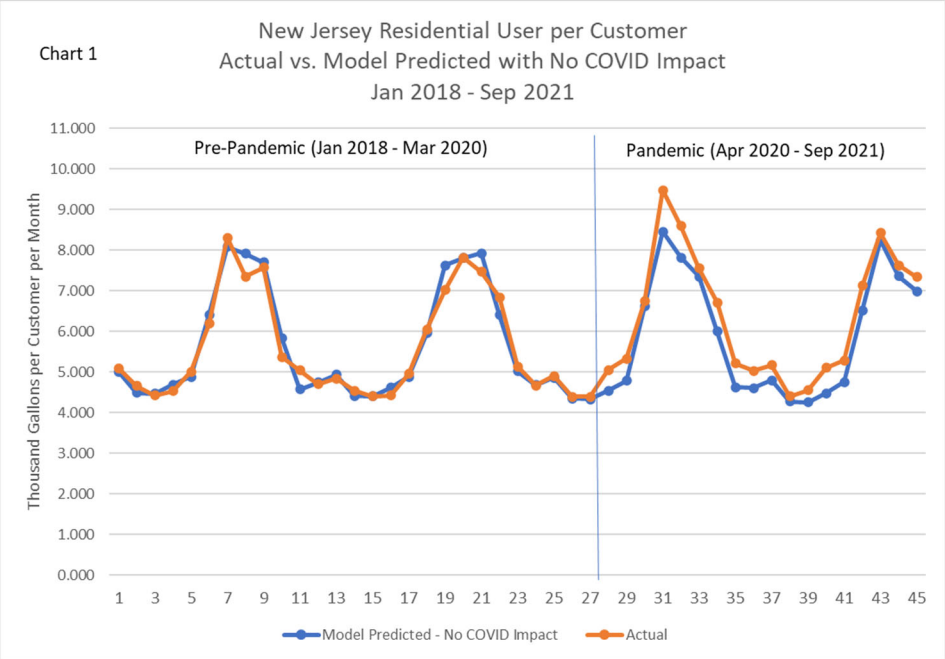

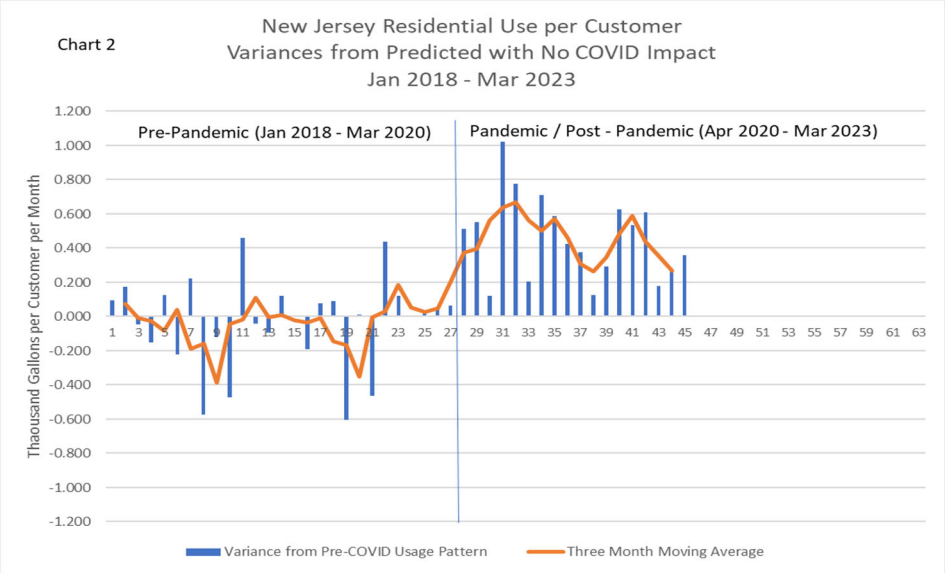

64. Q. What impact did COVID-19 have on commercial usage?

A. Chart 3 and Chart 4 show the impact that COVID-19 has had on commercial usage, except in this case we are stopping both charts at September 2021. Chart 4 shows actual commercial use per customer from January 2018 through March 2020 (pre-COVID-19) and then from April 2020 through September 2021.

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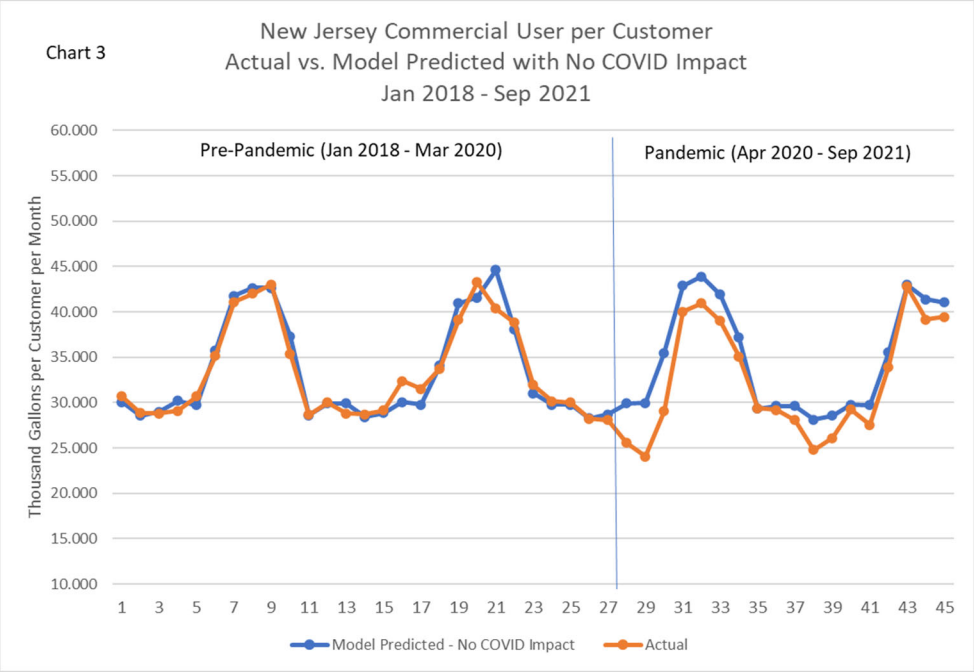
Chart 3 also contains a baseline usage, or model-predicted usage, for the same time periods assuming no COVID-related impact. Chart 4 shows the differences between actuals and baseline usage (no COVID-19 impact) for the same periods. This data shows that there was a significant drop in commercial usage in the three-month period from April through June 2020 after the public health emergency began with a gradual return to more normal levels after June 2020, which has continued through 2021. We estimate that the total COVID-related impact on commercial use per customer during the Test Year was a negative 23,548 gallons per customer and we are therefore proposing a positive corresponding adjustment to commercial use per customer to reflect expected Post-Test Year conditions.



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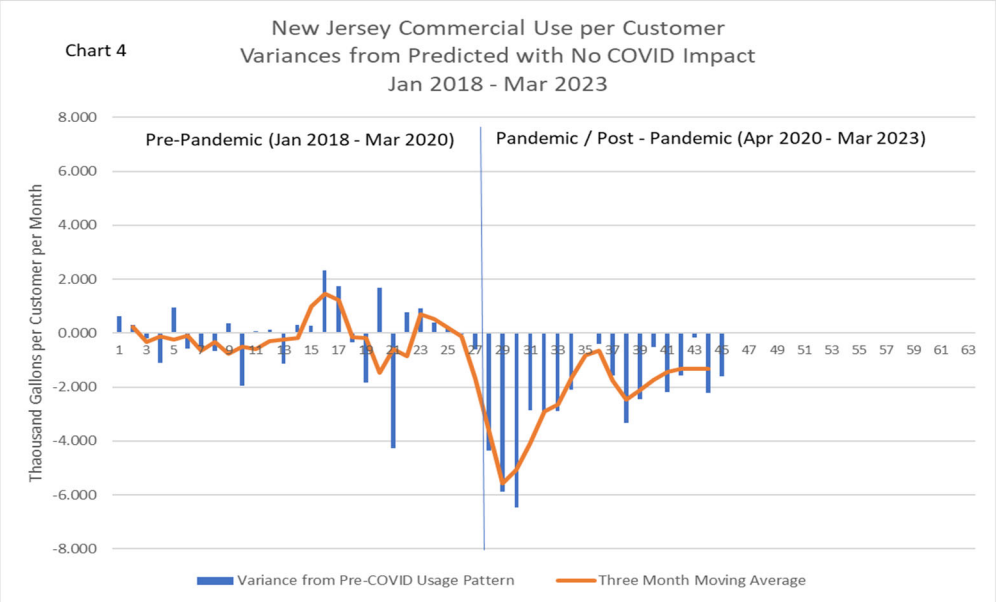

65. Q. What impact did COVID-19 have on OPA usage?

A. Chart 5 and Chart 6 show the impact that COVID-19 has had on OPA usage. Chart 5 shows actual OPA use per customer from January 2018 through March 2020 (pre-COVID-19) and then from April 2020 through September 2021. Chart 5 also contains a baseline usage, or model-predicted usage, for the same time periods assuming no COVID-related impact. Chart 6 shows the differences between actuals and baseline usage (no COVID-19 impact) for the same periods. This data shows that there was a significant drop in OPA usage in the three-month period from April through June 2020 after the public health emergency began with a full return to more normal levels by the Summer of 2021. We estimate that the total COVID-related impact on OPA use per customer during the Test Year was a negative 50,681 gallons per customer and we are therefore proposing a positive corresponding adjustment to OPA use per customer to reflect expected Post-Test Year conditions.

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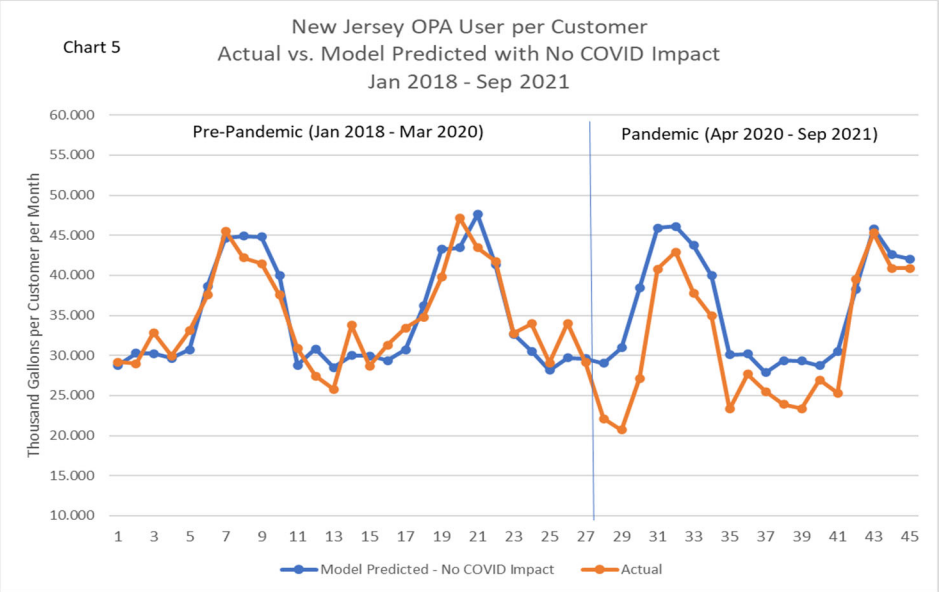
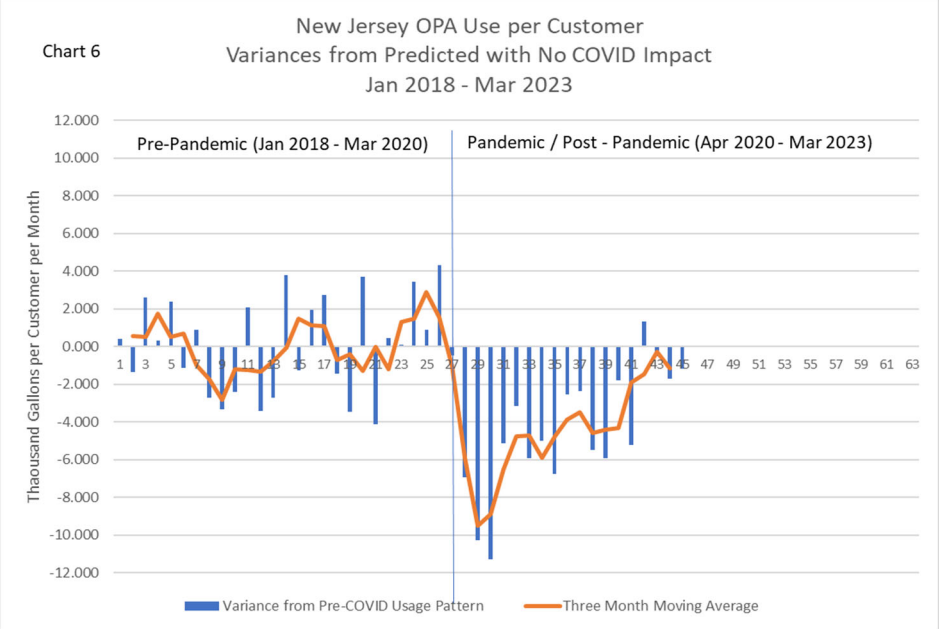


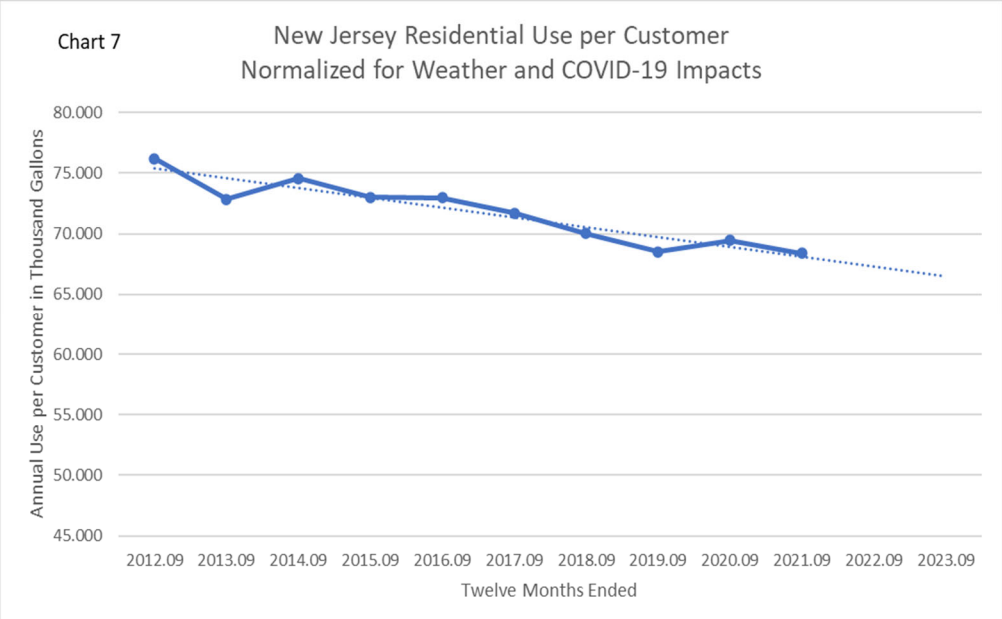


66. Q. What does your analysis of residential, commercial, and OPA usage show in terms of declining usage?

A. The statistical analysis of residential, commercial, and OPA 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 all three classes. Charts

NEW JERSEY-AMERICAN WATER COMPANY, INC.

7, 8, and 9 below show use per customer for residential, commercial, and OPA customers respectively for the ten years ending September 2021 adjusted for the weather impacts and COVID-19 impacts I have previously described in my Direct Testimony. In all cases, there is a significant and pervasive downward trend. Modeling shows that the usage decline for residential customers is 845 gallons per customer per year, the usage decline for commercial customers is 1,769 gallons per customer, and the usage decline for OPA customers is 3,707 gallons per customer. Extending these adjustments to Test Year consumption levels results in a residential downward adjustment of 1,104 gallons per customer, a commercial downward adjustment of 3,832 gallons per customer, and an OPA downward adjustment of 9,164 gallons per customer.



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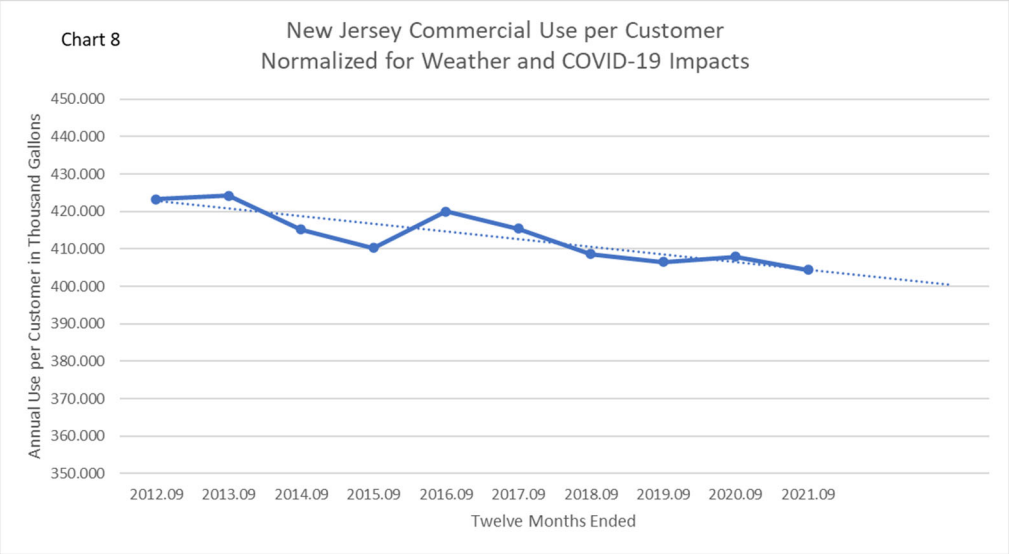
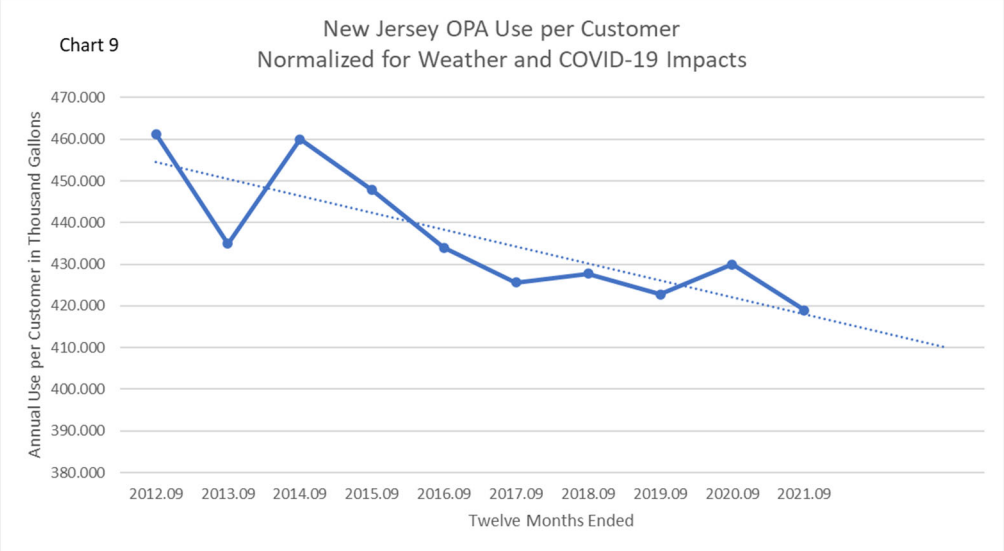




67. Q. Based on these usage trends, what is the net effect of the sum total of the adjustments you are proposing for residential, commercial, and OPA usage in this case?

A. The following table shows the sum of all the adjustments to residential, commercial, and OPA use per customer related to weather, COVID-19 impacts, and declining usage:

NEW JERSEY-AMERICAN WATER COMPANY, INC.

Use per Customer Adjustments	Residential	Commercial	OPA
Weather	178	155	994
COVID-19	-5,831	23,548	50,681
Declining Use	-1,104	-3,832	-9,164
Total	**-6,758**	**19,871**	**42,461**

68. Q. Did you conduct a separate analysis of usage consumption for residential and commercial customers specifically related to wastewater service?

A. No. The results of these water consumption analyses are also used as the basis for the revenue adjustments I describe later in my Direct Testimony for wastewater revenues for residential and commercial customers in the Company's service territory. We did not separately model usage for wastewater customers.

REVENUES

69. Q. Please explain the development of the Company's Revenue Forecast as set forth in Exhibit P-2, Schedule 5.

A. The process of developing the proposed revenue increase in this case for water and sewer service begins with normalization of the actual billing determinants 12-months ending June 30, 2021. Revenues are projected for the 12-month period ending June 30, 2022 (Test Year), to which various pro forma adjustments were made. The Post Test-Year adjustments made to Test Year revenues result in a revenue calculation at present rates for the forecasted period ending March 31, 2023.

70. Q. Please describe the development of Test Year revenues for the 12 months ending June 30, 2022.

A. Test Year revenues were calculated as normalized billing determinants multiplied by present tariff rates. Adjustments were made to historical residential, commercial, and OPA usage for weather normalization, COVID, and trends in declining usage as I have previously described in my Direct Testimony. General metered service industrial usage were normalized using a three-year average per customer based on the period from July 2019 to June 2021.

71. Q. Please describe the development of Post-Test Year revenues at present rates.

A. Revenues for Post Test-Year at present rates are based on current rates and projected billing determinants by service classification for the 12-month period ending March 31, 2023, as well as projections for other miscellaneous revenues. These projections of revenues for the Post-Test Year at present rates compared to the calculated revenue requirement for the same period is the basis for the requested increase in this case.

72. Q. How were the revenues by service classification component determined?

A. Generally speaking, forecasted sales were determined by multiplying forecasted customer counts for each class by forecasted use per customer. Meter charge billing determinants were developed by applying forecasted customer growth to the historical distribution of meter billing determinants by

meter size that existed for the 12-month period ended June 30, 2021 and adding those values to the historical billing determinants. Usage billing determinants were determined by applying forecasted sales to the pattern of usage that exists for the 12-month period ended June 30, 2021. Forecasted billing units for both monthly meter charges and usage were multiplied by current rates to get forecast revenue at present rates.

73. Q. Please describe the calculations for revenues for the General Metered Service ("GMS") class.

A. Revenues for the GMS class were determined by multiplying forecasted customer counts by forecasted use per customer for each account class. Residential, commercial, industrial, and other public authority organic customer growth or loss was projected using a time series forecasting function to project future customer count based on historical data from 2014 through 2021. Weather normalized customer usage at March 2023, based on the usage modeling I previously discussed in my Direct Testimony, was used to project customer usage for the residential, commercial, and OPA classes. Since rates are being set in this proceeding for a future period, it is important to capture usage per customer for that time period estimated to be at the mid-point of the first year when new rates will be in effect. Usage for the industrial class was determined using a three-year average of usage per customer for periods 12 months ended June 2019, June 2020, and June 2021. Using a three-year average of water usage for industrial customers is an appropriate period to use for

normalizing sales. This time period eliminates short term fluctuations in usage while still reflecting water consumption levels for these customers.

74. Q. Please describe the calculations for the Optional Industrial Wholesale ("OIW") class.

A. Revenue projections for the OIW class are performed on a customer-by-customer basis. Usage for OIW customers were forecasted using the committed annual usage except for two OIW customers. For the two customers that were not forecasted using committed annual usage, the Company used a three-year average of actual usage.

75. Q. Please describe the calculations for the Sales for Resale class.

A. Similar to the OIW class, revenue projections for the Sales for Resale class is done on a customer-by-customer basis. There are a variety of different service offerings for different Sales for Resales customers. Sales projections associated with customers under each of the service offerings are detailed below:

- Test Year and Post-Test Year pro forma sales for the provision of Manasquan Service is based upon the annual purchase requirement of each customer for uninterruptible service.
- Pro forma sales from the provision of Commodity-Demand service are forecasted by annualizing each purchaser's contractual nominated demand.
- Test Year and Post-Test Year pro forma sales from the provision of Off-Peak Service are based upon annualizing each purchaser's contractual off-peak demand. For forecasted revenue purposes, the monthly off-peak

demand rate has been applied to each purchaser's contractual off-peak demand and annualized for the seven-month off-peak service period, while the commodity rate has been applied to the off-peak demand volume of water annualized for the 212-day off-peak service period.

- Pro forma sales from the provision of Service to Other Systems ("SOS") are based on the contract minimum purchase requirements for each customer.
- Pro forma sales from the provision of Peaking Service and Emergency or Backup Bulk Service are based upon a three-year average of water sales for the 12-month periods ended June 2019, June 2020 and June 2021.
- Pro forma sales from the provision of Regular Sales for Resale are based on the contract annual purchase requirement for each customer.

76. Q. Please describe the calculations for the Private Fire and Public Fire classes.

A. Revenue for private fire and public fire was calculated by multiplying the actual number of service connections and hydrants in service and billable at June 2021 by present rates. Pro forma Test Year revenue under present rates was calculated on the same basis utilizing the projected number of connections including growth in the number of connections and hydrants. Organic growth was projected using 3-year average change in count for the 12- month periods ended June 2019, June 2020, and June 2021.

77. Q. Are the Company's Distribution System Improvement Charge ("DSIC") revenues included in the development of Post-Test Year revenues at Present Rates?

A. Yes. DSIC charges are billed to customers as a fixed monthly charge based on meter size. The estimated rates for the second and third DSIC surcharge filings have been added to the base rate meter charges where applicable for the purpose of determining Post-Test Year revenues at present rate revenues.

78. Q. How are DSIC revenues accounted for in proposed rates?

A. The Company is recommending that the present DSIC revenues be rolled into base rates, consistent with N.J.A.C. 14:9-10.6.

79. Q. Please describe the calculations for the Wastewater classes.

A. There are a variety of service offerings for wastewater customers. Details for revenue projections for different groups of customers are outlined below:

- For Ocean City (Schedule 1-A), pro forma present rate revenues reflect normalized water sales that are based on a three-year average of usage per customer for the 12-month periods ended June 2019, June 2020, and June 2021. A three-year average of summer quarter usage for 2019, 2020, 2021 (sum of the water sales during the months of July, August, and September) is the basis upon which the annual minimum usage charges are determined. For the wastewater usage charge portion, projected usage was based on a three-year average usage per customer at the 12-month periods ended June 2019, June 2020, and June 2021 multiplied by the projected number of customers. Customer growth for the Test Year and Post-Test Year periods is based on time series forecasting function to project future customer count based on historical data from 2014 through 2021. Total projected summer

quarter usage and annual usage are multiplied by current tariff rates to arrive at pro forma present rate revenues.

- Pro forma present rate revenues for Lakewood, metered Tewksbury Township (Pottersville service area), Plumsted Township (Jensen's Deep Run) and Elk Township reflect annualized water sales based upon a three-year average of usage per customer experienced for each Winter Quarter of 2019, 2020, and 2021. Winter quarter water consumption (sum of the water sales during the months of January, February and March) is the basis upon which annual sewer usage charges are determined. For the fixed charge portion, total fixed charge billing units are based on projected number of customers, where customer growth for the Test Year and Post-Test Year periods is based on a time series forecasting function to a project future customer count based on historical data from 2014 through 2021. Total projected annual usage and monthly fixed charge billing determinants are multiplied by current tariff rates to arrive at pro forma present rate revenues.
- Pro forma present rate revenues for the Adelphia and Haddonfield Systems reflect normalized water sales based on a three-year average of usage per customer for the 12-month periods ended June 2019, June 2020, and June 2021. For the fixed charge portion, total fixed charge billing units are based on the projected number of customers, where customer growth for the Test Year and Post-Test Year periods is based on a time series forecasting function to project future customer count based on historical data from 2014 through 2021. Total projected annual usage and monthly fixed charge

billing determinants are multiplied by current tariff rates to arrive at pro forma present rate revenues.

- Pro forma present rate revenues for Statewide flat rate customers are based on the projected number of customers, where customer growth for the Test Year and Post-Test Year periods is based on a time series forecasting function to project future customer count based on historical data from 2014 through 2021.
- Pro forma present rate revenues for Other Contracts are based upon 2021-2022 number of students registered for the school contracts and number of units for the Beacon Hill Clubhouse.
- Pro forma present rate revenues for Municipal Contracts are based upon the number of billing determinants billed in 2021.

80. Q. How has the Company treated the recovery of its purchased water costs and sewage treatment and disposal costs and the associated revenues in this base rate case proceeding?

A. The Company has excluded all costs and revenues otherwise recovered through Purchased Water Adjustment Clause ("PWAC") and Purchased Sewerage Treatment Adjustment Clause ("PSTAC") rate schedules. Accordingly, the base rate case filed herein reflects: (1) total pro forma revenues predicated on the application of all tariff rate schedules, with the exception of the PWAC and PSTAC Rate Schedules, to all projected billing units, and (2) the total cost of

providing water and sewer service, with the exception of those costs just described.

81. Q. How were the various components of Other Revenues developed?

A. Revenue projections for Late Payment Fees, Returned Check Charges, Reconnect Fees, After Hours Charges, Usage Data, Application Fees and Frozen Meter revenues are based on three-year average for the 12-month periods ended June 2019, June 2020, and June 2021. Revenue projections for Storage Fees and Rents are adjusted for known and measurable changes in rental agreements and lease agreements to arrive at pro forma revenues. Revenue for Miscellaneous Services is based upon the projected sales of Solar Renewable Energy Credits during the 12-month period ending March 2023.

WATER SERVICE RATE DESIGN

82. Q. Please discuss some of the important guiding principles associated with sound rate design.

A. There are several important principles that pricing analysts and policy makers need to consider when developing appropriate rate design mechanisms for retail water service:

- **Cost Basis:** An important goal of rate design is to develop prices for water service to retail customers that are intended to recover the Company's approved revenue requirement and that reflect the cost of providing service to customers. Cost of service results inform pricing decisions and guide how

rates should be set such that each customer class contributes to the revenue requirement in accordance with their cost to serve.

- **Revenue Stability**: Rates should be designed in a way that provides revenue stability to the utility and that can be expected to reasonably recover the utility's revenue requirement over the long run. Consistent recovery of the approved revenue requirement through rates helps the utility to prudently manage and invest in the water delivery system, and poor rate design decisions can hamper the utility's ability to make investments and operate and maintain the water delivery system in a manner consistent with the long-term interest of its customers.
- **Efficiency of Use**: Rates should be designed to encourage efficient use of water resources by customers. The volumetric charges for water service should appropriately reflect the variable cost of providing water service while also providing customers an appropriate incentive to conserve water and manage their bills. Rates should communicate to customers the full cost of providing water service.
- **Gradualism**: Changes in rate design should be made to avoid inappropriate levels of rate shock. Rate shock can come both from general increases in revenues that can affect all customers and from changes in rate designs that can cause large increases to specific pockets of customers. Drastic changes in rates can cause customer confusion and dissatisfaction and have adverse effects on the utility's ability to provide quality customer service.

- **Avoidance of Discrimination**: Rates should not unduly discriminate against particular customer groups or provide different price signals to similarly situated customers taking similar services from the utility.
- **Simplicity and Feasibility:** Rate designs should be relatively simple and easy to understand and easy to communicate and manage and should result in bills that are clear and understandable.

83. Q. Please describe the Company's current rate design for General Meter Service ("GMS") water service.

A. NJAWC's current rate design for GMS customers is generally a flat volumetric rate with a monthly fixed charge that varies with the size of the meter.

- The large majority of GMS customers take service under Schedule A-1 and Schedule A-10. These rates share the same meter charge schedule, which starts at a monthly charge of $18.50 per month for a 5/8" meter and escalates for larger meter sizes. The volumetric rate for all customers on Rate A-1 is $6.8884 per thousand gallons and for Rate A-10, the rate is $6.4376 per thousand gallons.
- In addition to Rates A-1 and A-10, the Company offers water service to customers in the Haddonfield district (Schedule A-15) with a flat monthly fee of $14.00 per month regardless of the meter size and a volumetric rate of $6.8884 per thousand gallons. The Company also offers water service to customers in the Roxbury district (Schedule A-16) with a monthly charge

of $9.50 per month for a 5/8" meter that escalates for larger meter sizes and a flat volumetric rate of $3.7150 per thousand gallons.

84. Q. Please describe the Company's current rate design for OIW water service.

A. OIW rates are a single volumetric rate and a schedule of monthly meter charges identical to those for GMS rates. The volumetric rate for OIW customers is $3.78460 per thousand gallons for non-exempt customers and $3.2687 per thousand gallons for exempt customers. There are six OIW customers on this rate schedule.

85. Q. Please describe the Company's current rate design for Sales for Resale customers.

A. Sales for Resale customers take service under a variety of rate classifications with different rate structures:

- Rate Schedule A-2 is a schedule with three customers that includes the same meter charge schedule as GMS rates and a volumetric rate of $6.8884 per thousand gallons.
- Rate Schedule C and D are for Commodity-Demand customers. These rates have monthly meter charges that escalate with the size of the meter, and volumetric rates and demand rates for both on-peak and off-peak periods. There are 29 customers on these rate schedules.
- Rate Schedules E and J are for service to Manasquan customers. These rates have monthly meter charges that escalate with the size of the meter,

and separate rates for interruptible and non-interruptible service. There are six customers on these rate schedules.

- Rate Schedule G is for sales to other systems. This rate is for five large customers and has a single volumetric rate of $2.9574 per thousand gallons for non-exempt customers and $2.5543 per thousand gallons for exempt customers.
- Rate Schedule H is for peaking service to five customers. This rate is largely for summertime usage, shares the meter charge schedule with GMS customers, and has a volumetric rate of $9.1362 for thousand gallons.

86. Q. Please describe the Company's current rate design for fire protection service.

A. The Company has rates for both public fire and private fire protection. Public fire rates are all on a flat charge per hydrant, but the charges vary significantly between district with a low charge of $26.83 per hydrant under Schedule M-11 and a high charge of $74.50 per hydrant under Schedule M-9 and M-5. I will address these variations and the Company's proposal related thereto later in my Direct Testimony.

Private fire rates vary depending on the district and the exact type of service being provided, but generally have a flat monthly fee depending on the size of the service line, and some combination of separate fees for hydrants, sprinkler heads, and volumetric rates for actual water consumption depending on the district.

87. Q. Monthly meter charges are generally the same for all customers regardless of the rate schedule under which they take service with the exception of fire service. Is the Company proposing to change the monthly meter charges in this case?

A. Yes. The Company is proposing to increase monthly meter charges to $22.09 per month for a 5/8" meter, with proportionate increases to other meter sizes. The Company's proposal is to add the DSIC surcharge, based on the capped revenue level, to the current monthly meter charge. Thus, with the exception of the roll-in of the DSIC surcharge into the monthly meter charge, the proposed revenue increase in this case will be implemented through the volumetric rates and the fire service rates.

88. Q. What changes are the Company proposing to make to its rate design for water service in this case?

A. The Company is proposing the following changes to its water service rate design:

- The Company is proposing to complete the alignment of Rate Schedules A-1, and A-10 that was agreed to in the settlement approved by the BPU in Docket No. WR19121516 by aligning the volumetric rates in those two schedules. As a result, Rate Schedule A-10 will be eliminated.
- The Company is proposing to increase the monthly service charge in Schedule A-15 from $14.00 per month for a 5/8" meter to $17.59 per month to close the gap between the monthly service charges for Haddonfield

customers and the rest of the NJAWC's customer base. Like the proposal for meter charges for Rate Schedules A-1 and A-10, the Company's proposal for Rate Schedule A-15 is to add the DSIC surcharge, based on the capped revenue level, to the current monthly meter charge paid by those customers.

- The Company is proposing to increase monthly meter charges for Schedule A-16 (Roxbury) to $13.30 per month for a 5/8" meter and to increase the volumetric charge for Roxbury customers from $3.7150 per thousand gallons to $4.8622 per thousand gallons. This will make rates for Roxbury approximately 60% of the rates proposed for Schedule A-1.
- The Company is proposing to reduce the differences in public fire rates.

89. Q. Please address the process you are using to reduce public fire rate differences.

A. Currently, there is a wide range of public fire rates. The proposed average rate per hydrant in this application is $61.58. The Company is proposing to increase rates in each tariff group by $6 per month or the proposed overall percentage increase in this case whichever is greater up to a maximum level of $61.58. Hydrants with current rates above the proposed overall average of $61.58 will not receive an increase. In addition, the Schedule M-5 Zone 2L and M-9 rate of $74.50 will be reduced to $70.59, which is the next highest public fire rate in the Company's public fire tariff.

90. Q. Of the total revenues collected under proposed water rates, how much revenue is collected through fixed charges and how much revenue is collected through volumetric charges?

A. The Company's total proposed retail water revenue requirement equals $857,088,450. Of this amount, $259,377,683 is collected through fixed charges (34% of the total) and $561.710,766 is collected through volumetric charges (68% of the total).

91. Q. How does this breakdown of fixed and volumetric revenue compare to the breakdown of the Company's fixed cost versus variable cost in its revenue requirement?

A. Approximately 95% of the Company's water system costs are fixed and only 5% of the Company's costs are variable. In contrast, as mentioned above, 34% of the revenues are fixed, while approximately 68% of the revenues are variable. The Company, therefore, relies on variable (or volumetric) revenues for collecting fixed costs.

92. Q. Please describe how the Company is proposing to allocate its proposed revenue increase for water service to each customer class.

A. The Company is proposing to allocate its proposed increase in water service revenues according to the following guidelines:

- Increases for the OIW Class and all of the Sales for Resale classes will be held to the requested overall percentage increase in this case.

- Increases to the private fire rate category are proposed based on the overall percentage increase indicated by the Company's class cost of service study.
- Increases to public fire are proposed as I have previously identified in my Direct Testimony, which will yield an overall increase of approximately 7.5%, which is less than the proposed overall increase.
- The remaining increase will be allocated to GMS customers consistent with the proposed changes in water rate design that I have previously discussed for GMS. In addition, GMS customers will also be allocated a portion of the proposed increase in sewer revenue requirements that I will later discuss in my Direct Testimony.

93. Q. Do you have a schedule that provides the Company's complete proposed rate design in this case?

A. Yes. Schedule CBR-5 provides the Company's proposed rate design, which is based on the current rate design as modified by the proposals discussed above.

94. Q. Do you have a schedule that provides information on the impact to customers of implementing the Company's proposed rate design?

A. Yes. A complete set of impacts to customers comparing bills under present rates and proposed rates is provided in Schedule CBR-6.

NEW JERSEY-AMERICAN WATER COMPANY, INC.

WASTEWATER SERVICE RATE DESIGN

95. Q. Please describe the Company's current rate design for sewer service.

A. NJAWC's current rate design for sewer service is generally a flat monthly fixed charge and a volumetric rate that is based either on average summer usage, average winter usage, or total annual usage depending on the district and tariff. There are 19 different tariffs under which wastewater service is or is expected to be offered, and pricing in each tariff is significantly different.

96. Q. Is the Company proposing to make changes to its rate design for sewer service?

A. No. The Company is not proposing to change the rate design (type of billing determinants used) in any wastewater tariff. The Company is proposing to move rates closer together between each district to reduce the disparities in sewer service rates between districts.

97. Q. Please discuss the current disparities in sewer rates and the process you are using to reduce those disparities.

A. While the rate designs for sewer service are different from rate schedule to rate schedule, it is possible to evaluate the rates on a single consistent basis by looking at average monthly residential bills for each district. For example, customers using an average of 5,400 gallons per month for Rate Schedule 11-A Haddonfield, the bill equates to $21.59. At the same level of usage, the average monthly bill for a customer on Rate Schedule 6-A Pottersville, is

$88.36. To reduce disparities the Company is proposing the following rate increases:

- For Schedules 3-A (Adelphia), 11-A (Haddonfield), and 12-A (Elk Township), the Company is proposing a 27.8% increase. This proposed increase will bring lower priced sewer districts closer to the overall sewer system average in terms of typical residential monthly bills. For example, the average Haddonfield customer will now pay $27.88 instead of $21.74, but they still remain at the low end of the range.
- For Schedules 5-A and 6-A (Pottersville) the Company is proposing a 7.0% increase as these districts are the highest price districts in term of typical residential monthly bills.
- For Schedules 13-A (Mt. Ephraim Sewer Services) 14-A (Long Hill flat charge) and 15-A (Long Hill metered service), the Company is proposing a 3% increase per the terms of the Company's acquisition agreements with those customers.
- For Schedules 16-A, 17-A, 18-A and 19-A (Egg Harbor and Bound Brook), the Company is proposing no increase per the terms of the Company's acquisition agreements with those customers.
- For all other rate groups, the Company is proposing increases of 13.9% to achieve an overall increase for the Company's sewer service territory of 11.7%, which is the overall increase proposed by the Company in this proceeding.

The ultimate result of these increases is to bring the lowest price district (Haddonfield) up to $27.88 per month for an average residential customer from the current level of $21.74.

98. Q. What increase is the Company asking for its sewer service revenues?

A. The Company is proposing to increase sewer service revenues by $3,177,438 or 11.7%, which is a percentage equal to the overall percent increase in revenue the Company is proposing in this case. The remaining sewer service revenue requirement not recovered through sewer service rates is proposed to be recovered from GMS water service customers.

99. Q. Do you have a schedule that provides the Company's complete proposed rate design for sewer service in this case?

A. Yes. Schedule CBR-5 provides the Company's proposed rate design, which is based on the Company's current rate design.

AFFORDABILITY

100. Q. Please describe the general concept of affordability for water and wastewater service.

A. The concept of affordability for water and wastewater service is based on the idea that everyone should have access to water and wastewater services that are: (1) safe, meaning it complies with EPA regulations and Safe Drinking Water Act standards; (2) reliable, so that it is resilient in the face of floods, droughts, and other climate risks; and (3) affordable. An assessment of affordability

generally compares monthly or annual bills for water or wastewater service to measures of household income.

101. Q. How can one assess the affordability of water and wastewater service and what information is needed to complete such an assessment?

A. A common way to assess affordability is to compare annual bills for water and/or wastewater service to some measure of household income in the communities that the utility serves. Such an assessment requires two data points -- the average monthly or annual bill for water and wastewater service and some measure of household income for the target customer population. For the broader residential customer base, the most common household income measure is Median Household Income ("MHI"), which can be measured at a community level and paired with a data set that provides the number of customers served in each community in order to arrive at a weighted number that represents MHI for the Company's service territory as a whole. Alternative measures of income, such as disposable income or hours of labor at minimum wage needed to cover the cost of water and/or wastewater service have also been suggested.[4]

When an appropriate measure (or measures) of household income is determined, affordability can then be assessed for the average customer, low-income customers, and a full range of households based on their various income

[4] Teodoro, Manuel P. "Measuring Household Affordability for Water and Sewer Utilities." Journal AWWA, 2018, doi:10.5942/jawwa.2018.110.0002

levels and bills for water and/or wastewater service. A variety of household income data is readily and publicly available from the U.S. Census Bureau through the American Community Survey at the state, county, and community level.

102. Q. What can different measures of affordability for water and wastewater service expressed as a percentage of MHI tell you?

A. Assessing affordability information of water and wastewater service for the entire residential customer population can tell you 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 of water and wastewater service for lower income customers can tell you the number of customers that may be having trouble paying their utility bills, where in the Company's service territory these customers are, and the extent to which those bills are causing customers economic distress. This can, in turn, inform the utility about the size and scope of low-income assistance programs that may be needed to help these vulnerable customers better afford water and wastewater service, both in terms of rate design proposals and customer assistance programs that may include customer grants, tariff discounts, levelized billing, and outreach programs.

103. Q. Has the Company completed an affordability study regarding bills that would arise from proposed rates in this case?

A. Yes. The Company's affordability study for water service is provided in Schedule CBR-7. The Company's affordability study for wastewater water service is provided in Schedule CBR-8.

104. Q. What information does the Company's affordability study provide?

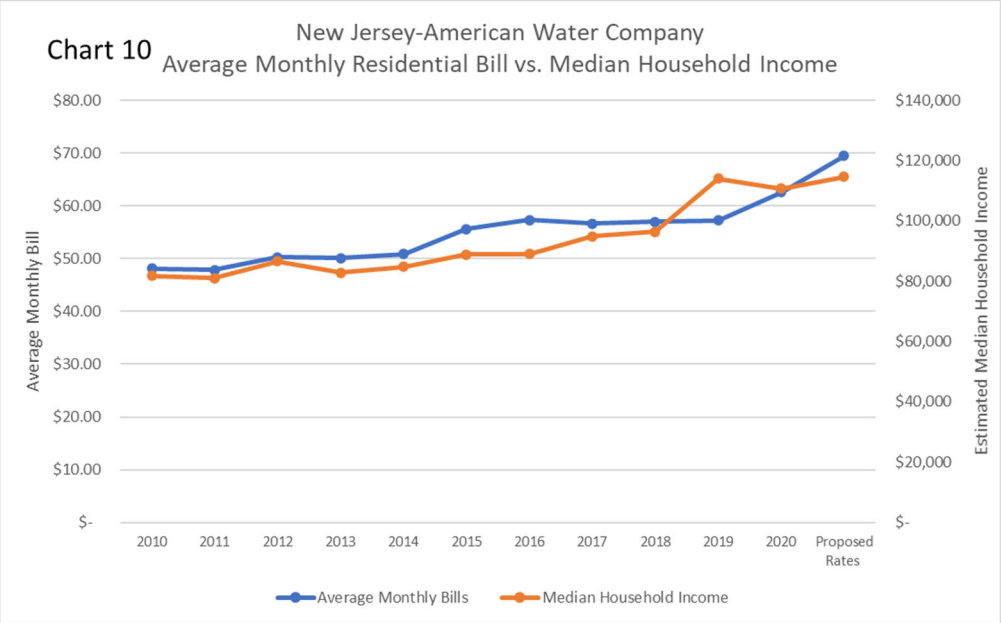
A. The Company's affordability study is two different analyses and provides two basic types of information. This information includes:

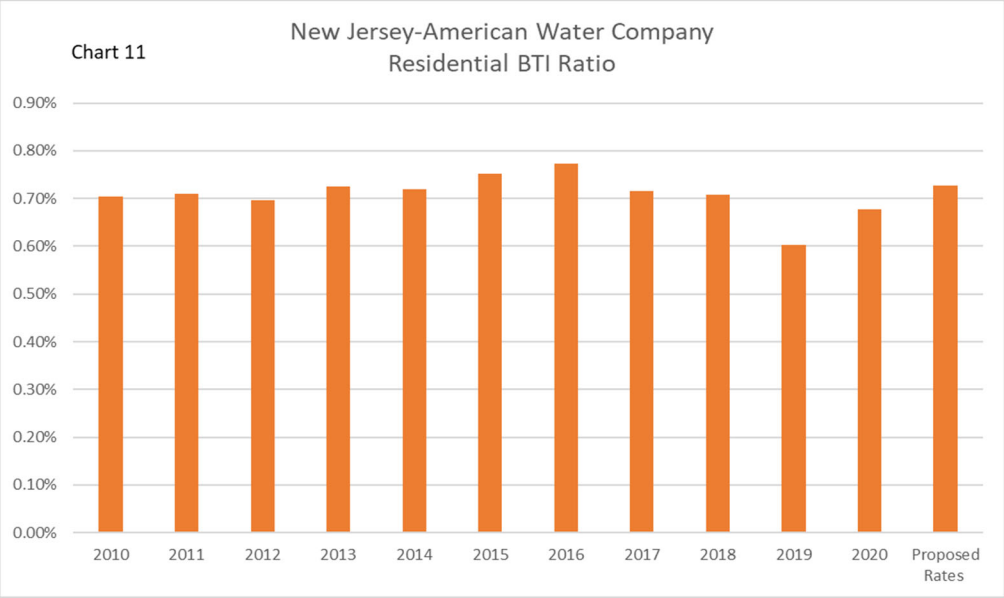
- Historical comparisons of average monthly bills to MHI shown in actual terms and shown in terms of Bill to Income Ratio ("BTI Ratio") which is defined as estimated annual water bills divided by estimated annual household income.
- Current information on the estimated number of customers in the service territory, and estimated BTI Ratios for various income levels stated in terms of household income and multiples of the Federal Poverty Level ("FPL"). BTI Ratios are calculated for proposed rates in this case.

105. Q. What is the result of your historical comparison of average monthly water bills to median household income in the NJAWC service territory?

A. The charts below compare historical average monthly water bills to MHI for New Jersey-American customers from 2010 through 2020 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 New Jersey-American customers during the first 12-month period following the effective date of new rates. The data shows that BTI Ratios for the residential

customer base have held steady in the 0.60%-0.80% range since 2010 and are expected to be 0.73% under the Company's proposed rates in this case.





106. Q. What information is needed to do a focused assessment of affordability of water and wastewater service for the Company's most vulnerable customers?

A. A more focused assessment of affordability targeted at the Company's more vulnerable customers can compare annualized bills for "basic water and/or wastewater 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. Such a more focused affordability assessment requires a much more detailed information set that includes:

1. Standard measure of defining low-income customers.

   Typically, a standard measure of income for lower-income centers around various multiples of the FPL, which is set by the federal government and varies depending on the number of persons in the household. For calendar year 2020, 100% of FPL for a three-person household in the lower 48 states was $21,720 per year. Multiples of FPL can then be used to set low-income benchmarks (50% of FPL, 150% of FPL, 200% of FPL, etc.). It is important to note that FPL is both a function of income and the number of persons in the household, so the estimation of the number of households at different levels of FPL is more complicated than simply understanding income level.

2. Number of households in the service territory that qualify as low-income customers.

   The number of households that fall within different levels of income or different intervals of FPL can best be found through the previously-mentioned U.S. Census Bureau data, which provides this information at a community level. As previously stated, this data can be paired with a data

set that provides the number of customers served by community to determine the estimated percentage of households at different income levels in the service territory. The number of customers at different multiples of FPL can also be estimated by pairing households at different income levels in the service territory with the number of persons per household by income level, which is also available through U.S. Census Bureau data.

3. Number of low-income households that are customers of the utility.

The number of low-income households in a service territory does not necessarily equate to the number of low-income customers of the utility, because lower income customers are more likely to rent and less likely to own homes than higher income customers. Water and wastewater service to apartment buildings and other multifamily housing units are often in the name of the building owner, and tenants are generally not the utility customers of multifamily housing units. To determine the number of low-income households that are actually low-income customers of the utility, one needs to determine a) the level of home ownership in the community by income level, and b) the percentage of renters in a community that rent other single-family homes (for which those renters are likely the paying customer of record) versus renters that live in apartment buildings and other multifamily units.

4. Common understanding of what constitutes basic water service.

When looking at the appropriate usage levels to determine affordability for lower income groups, it is not appropriate to rely solely on average usage

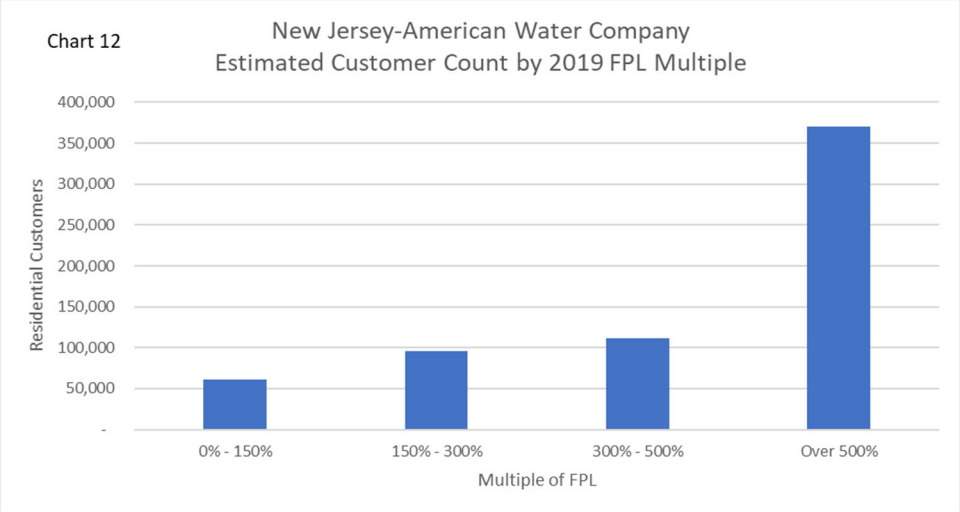
levels for a residential customer class in total. A better approach is to identify a usage level that reflects water consumption provided for basic human services (cooking, cleaning, sanitation, and general health requirements), which is then assumed to be constant from month-to-month and not subject to significant seasonality or weather conditions. This standard can be expressed in terms of gallons per resident per day. An advantage of this approach is that a basic water service metric stated in terms of gallons per resident can be paired with the fact that lower income households tend to have lower occupancy rates in terms of persons per household. This information, which is available from U.S. Census Bureau data, can be used to customize a level of usage that accurately reflects basic water service for lower income households.

An alternative approach is to look at individual customer billing records and identify a median monthly water consumption for all customers with relatively flat non-seasonal usage across the year. The use of a median statistic in this case reduces the impact of very high usage customers. Another alternative is to choose a consecutive period of time during the year (February through April for example) that tends to have the lowest average use per customer over the course of the year and has the least amount of discretionary seasonal water usage, if any at all. This method helps to ensure that the monthly usage used in an affordability analysis represents the least

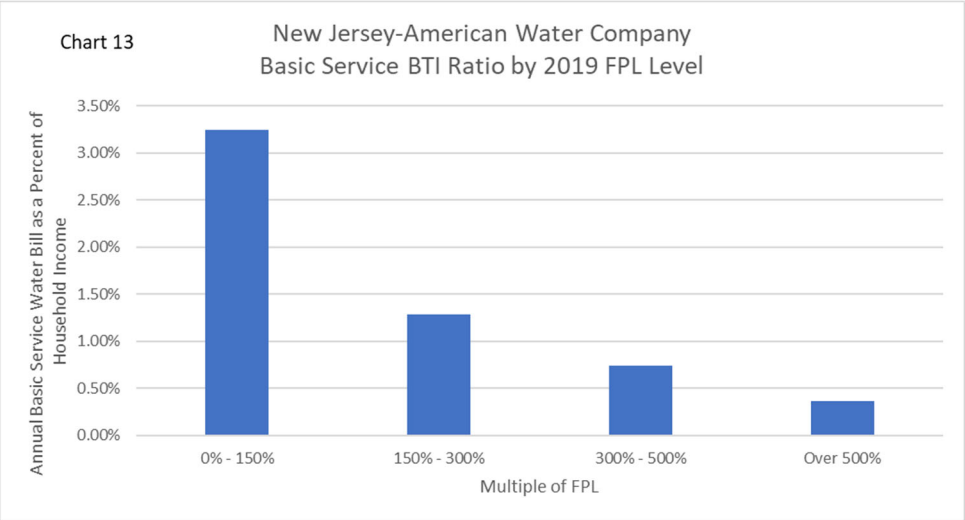
amount of discretionary water use, and therefore is most representative of basic water usage in a given service territory.

107. Q. What does your affordability study show in terms of the estimated number of customers in New Jersey by household income and how bills for Basic Water Service compare for these customers in terms of BTI Ratios?

A. The charts below show estimated number of customers by multiples of FPL for the Company's residential customers and the BTI Ratios for bills for Basic Water Service for each income group under the Company's proposed rates in this case.



NEW JERSEY-AMERICAN WATER COMPANY, INC.



For the vast majority of our customers, BTI Ratios are less than 2% for Basic Water Service at the Company's proposed rates. The Company estimates that there are approximately 60,000 residential customers with household incomes at or below 150% of FPL which represents approximately 9.5% of the Company's residential customer base. For these customers, the average BTI Ratio is approximately 3.25%, for Basic Water Service, which is defined to be 40 gallons of water per household per day.

108. Q. What conclusions do you draw based on the Company's affordability study?

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

- The Company's water service has been and is expected to continue to be affordable for the majority of its residential customers, including under final rates proposed in this case.

- There are groups of customers for whom affordability of water service may be a concern. That concern, however, is alleviated by the fact that basic water service would comprise only 3.25% of BTI for a lower income customer, which, as shown below, falls within the affordability definition for that group. There are, moreover, customer assistance programs for those customers that attenuate the effect on the BTI in many cases.

109. Q. Is there a generally accepted standard for the affordability of water and wastewater expressed as a percentage of MHI?

A. A benchmark for affordability expressed as a total bill's percentage of MHI is a policy decision; however, bills less than 2.0% or 2.5% of MHI for water and 4.0% to 4.5% of MHI for combined water/wastewater are considered "affordable" by some.[5] An affordability benchmark for water service of 3.0% to 4.5% of household income has also been proposed specifically for lower income groups.[6]

110. Q. How do the results of the Company's affordability study for wastewater service compare to the results for water service?

A. The following table provides MHI data, average monthly bills for basic service, and BTI ratios for the Company's proposed rates in this proceeding for water

[5] Teodoro, Manuel P. "Measuring Household Affordability for Water and Sewer Utilities." Journal AWWA, 2018, doi:10.5942/jawwa.2018.110.0002.

[6] Colton, R. (2020). The Affordability of Water and Wastewater Service in Twelve U.S. Cities: A Social, Business and Environmental Concern prepared for The Guardian (U.S. Office). New York NY. https://www.theguardian.com/environment/2020/jun/23/full-report-read-in-depth-water-poverty-investigation

and wastewater service aggregated across the Company's entire service territories for water and wastewater service.

Basic Service Statistics	Median Household Income	Average Monthly Bill	BTI Ratio
Water Service	$116,454	$49.31	0.51%
Wastewater Service	$92,622	$54.61	0.71%

111. Q. How is the Company currently addressing concerns for low-income customers?

A. NJAWC offers a targeted customer assistance program to help its most vulnerable customers. The H2O Program, administered by New Jersey SHARES,[7] was created by the Company in 2004 and has been improved over time.[8] The H2O Program is available to customers with an annual income at or below 300% of the FPL that qualify, and is composed of two main components: grants and a discount on the service charge. The grant component is an emergency bill-paying assistance program funded by NJAWC's shareholders and donations from customers who want to help other customers in need. Eligible customers may receive grants of up to $500 toward their NJAWC bill. The service charge discount component, funded through rates, provides eligible

[7] NJ SHARES is a statewide non-profit corporation providing assistance to individuals and families in need of help meeting their energy and utility burden.

[8] For example, in 2017, NJAWC expanded the income limits from 200% to 300% of the federal poverty level, and in 2019, NJAWC increased the length of time applicants are given to provide documentation to New Jersey SHARES, from three days to 10 days. Most recently, the Company temporarily waived certain eligibility requirements to further enhance access to the program, including requiring a customer contribution and the restriction of receiving a grant only once every three years.

customers up to a 100% discount on their monthly fixed service charge for water and is also available for our wastewater customers. Eligible customers who also receive Social Security benefits or Medicare coverage are also eligible to receive a discount off the monthly DSIC charge, which is based on meter size.

In addition, NJAWC's residential customers have the option of paying bills under the Company's budget billing plan, whereby the total service for the succeeding 12-month period is estimated in advance, and bills are rendered monthly on the basis of one-twelfth (1/12) of the 12-month estimate. The Company also offers its customers flexible payment arrangements through installment agreements if they are financially unable to pay a past due water or wastewater service bill.

112. Q. Is the Company proposing any additional programs to further support low-income customers?

A. The Company is not proposing any additional programs at this time, but is open to working with Board Staff, Rate Counsel and other key stakeholders to develop a program that makes sense for customers and the Company.

113. Q. Does this conclude your Direct Testimony?

A. Yes, it does.

NEW JERSEY-AMERICAN WATER COMPANY, INC.

Appendix A

1. Q. Please describe your educational background and professional associations.

A. I received a Bachelor of Arts degree in Computer Science from the University of Illinois at Springfield in 1986 and a Master's degree in Statistics and Operations Research from Southern Illinois University at Edwardsville in 1990.

2. Q. What has been your business experience?

A. I have been employed by AWWSC since January 2018. In my role as Director, Rates and Regulatory, my primary responsibility is to serve as the subject matter expert on cost of service and rate design issues. Previous to my employment with AWWSC, I was employed by MidAmerican Energy Company from June 1990 through January 2018. I have over thirty years of utility experience covering a wide range of issues including electric system planning, sales and revenue forecasting, electric load research, marketing, rates, cost of service, and energy efficiency. Most recently at MidAmerican, I was Director, Energy Efficiency and Regulatory Analytics. In that position I had responsibility for planning, evaluation, and operational management of MidAmerican's energy efficiency and demand response programs in Illinois, Iowa, and South Dakota, as well as direct responsibility for electric and natural gas sales and revenue forecasting, electric peak demand forecasting, load research, retail pricing of electric and natural gas products, and electric and natural gas cost of service and rate design.

New Jersey-American Water Company
2022 Cost of Service Study - Functional Allocators to Customer Class

	Functional COS	Alloc	Description	General	Optional Ind. Whole.	Manasquan Resale	Resale CD	Resale SOS	Private Fire	Public Fire	Total	Variance
Source of Supply Expense												
Fixed	$ 35,664,567	2A	Base/Extra Daily w/o Manasquan	$ 28,684,295	$ 1,561,906	$ -	$ 2,109,960	$ 3,279,370	$ 29,036	$ -	$ 35,664,567	$ -
Variable	$ 10,876,598	1A	Total Usage w/o Manasquan	$ 8,143,240	$ 530,381	$ -	$ 922,341	$ 1,267,944	$ 12,693	$ -	$ 10,876,598	$ -
Power and Pumping Expenses												
Fixed	$ 63,886,183	2	Base/Extra Daily	$ 51,102,225	$ 2,782,599	$ 348,322	$ 3,758,978	$ 5,842,330	$ 51,728	$ -	$ 63,886,183	$ -
Variable	$ 5,557,919	1	Total Usage	$ 4,128,735	$ 268,911	$ 43,333	$ 467,639	$ 642,865	$ 6,435	$ -	$ 5,557,919	$ -
Water Treatment												
Fixed	$ 118,063,048	2	Base/Extra Daily	$ 94,438,018	$ 5,142,302	$ 643,707	$ 6,946,673	$ 10,796,753	$ 95,595	$ -	$ 118,063,048	$ -
Variable	$ 24,082,403	1	Total Usage	$ 17,889,766	$ 1,165,187	$ 187,763	$ 2,026,277	$ 2,785,527	$ 27,884	$ -	$ 24,082,403	$ -
Transmission	$ 137,801,841	4	Base/Extra Daily w/ Fire	$ 103,613,676	$ 5,623,354	$ 699,850	$ 7,552,548	$ 11,773,795	$ 1,855,589	$ 6,683,029	$ 137,801,841	$ -
Distribution	$ 167,405,298	5	Base/Extra Hourly w/ Fire	$ 151,402,276	$ 558,845	$ 155,456	$ 536,842	$ -	$ 3,210,844	$ 11,541,035	$ 167,405,298	$ -
Storage	$ 56,626,130	6	Storage	$ 44,216,645	$ 1,922,354	$ -	$ 1,532,324	$ 2,439,856	$ 1,425,709	$ 5,089,241	$ 56,626,130	$ -
Meters	$ 64,471,109	7	Meters	$ 63,884,988	$ 451,339	$ 37,624	$ 97,158	$ -	$ -	$ -	$ 64,471,109	$ -
Services	$ 85,398,386	8	Services	$ 61,377,340	$ 328,067	$ 27,348	$ 70,585	$ -	$ 23,595,046	$ -	$ 85,398,386	$ -
Customers	$ 55,074,009	9	Customers	$ 54,032,209	$ 499	$ 499	$ 2,327	$ 415	$ 1,012,642	$ 25,419	$ 55,074,009	$ -
Hydrants	$ 32,180,960	10	Hydrants	$ -	$ -	$ -	$ -	$ -	$ 1,541,217	$ 30,639,743	$ 32,180,960	$ -
Total	**$ 857,088,450**			**$ 682,913,411**	**$ 20,335,743**	**$ 2,143,901**	**$ 26,023,652**	**$ 38,828,857**	**$ 32,864,418**	**$ 53,978,467**	**$ 857,088,450**	$ -
				79.68%	2.37%	0.25%	3.04%	4.53%	3.83%	6.30%		
Test Year Water Revenue	$ 775,766,850			$ 653,258,655	$ 16,038,637	$ 1,568,492	$ 19,524,406	$ 27,737,073	$ 26,815,521	$ 30,824,066	$ 775,766,850	$ -
Other Water Operating Revenues	$ 5,361,623											
Increase	$ 81,321,600			$ 29,654,756	$ 4,297,106	$ 575,409	$ 6,499,246	$ 11,091,784	$ 6,048,897	$ 23,154,401	$ 81,321,599	$ (1)
Percent Increase	10.48%			4.54%	26.79%	36.69%	33.29%	39.99%	22.56%	75.12%	10.48%	
Test Year Revenue				$ 653,258,655	$ 16,038,637	$ 1,568,492	$ 19,524,406	$ 27,737,073	$ 26,815,521	$ 30,824,066	$ 775,766,850	
Cost of Service Increase				$ 29,654,756	$ 4,297,106	$ 575,409	$ 6,499,246	$ 11,091,784	$ 6,048,897	$ 23,154,401	$ 81,321,599	
Adjustments				$ 41,756,396	$ (4,297,106)	$ -	$ (6,499,246)	$ (11,091,784)	$ (6,048,897)	$ (23,154,401)	$ (9,335,038)	
Revenue Target				$ 724,669,807	$ 17,916,792	$ 1,752,165	$ 21,810,751	$ 30,985,137	$ 26,815,521	$ 33,138,276	$ 857,088,449	
Percent Increase				10.9%	11.71%	11.71%	11.71%	11.71%	0.00%	7.51%	10.48%	
Variable Cost	$ 42,982,306											
				Increase Caps:	11.71%	11.71%	11.71%	11.71%		11.71%		

New Jersey-American Water Company
2022 Cost of Service Study - Account Detail

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Source of Supply Expense															
Operating Expense															
Purchased Water	$ 722,032	A	Source of Supply	$ 722,032	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 722,032	$ -
Fuel and Power	$ 10,154,566	A	Source of Supply	$ 10,154,566	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,154,566	$ -
Chemicals	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Waste Disposal	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Salaries and Wages	$ 603,437	A	Source of Supply	$ 603,437	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 603,437	$ -
Employee Benefits	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Group Insurance	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Benefits	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Support Services	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Contract Services	$ 387,032	A	Source of Supply	$ 387,032	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 387,032	$ -
Building Maintenance & Services	$ 1,257,526	A	Source of Supply	$ 1,257,526	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,257,526	$ -
Telelcommunications	$ 1,423	A	Source of Supply	$ 1,423	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,423	$ -
Office Supplies	$ 5,259	A	Source of Supply	$ 5,259	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,259	$ -
Employee Related Expenses	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Miscellaneous	$ 80,105	A	Source of Supply	**$ 80,105**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 80,105**	**$ -**
Rents	$ (1,389)	A	Source of Supply	$ (1,389)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (1,389)	$ -
Transportation	$ 16,100	A	Source of Supply	$ 16,100	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 16,100	$ -
Uncollectible Accounts	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Customer Accounting	$ 52	A	Source of Supply	$ 52	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 52	$ -
Regulatory Expense	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Insurance Other Than Group	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ 13,226,142			$ 13,226,142	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,226,142	$ -
Maintenance Expense															
Salaries and Wages	$ 48,111	A	Source of Supply	$ 48,111	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 48,111	$ -
Engineered Coating of Steel Structures	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Maintenance	$ 298,922	A	Source of Supply	$ 298,922	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 298,922	$ -
	$ 347,033			$ 347,033	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 347,033	$ -
Total SS Expense	**$ 13,573,175**			**$ 13,573,175**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 13,573,175**	**$ -**
Power and Pumping Expenses															
Operating Expense															
Purchased Water	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Fuel and Power	$ 5,557,919	B	Pumping	$ -	$ 5,557,919	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,557,919	$ -
Chemicals	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Waste Disposal	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Salaries and Wages	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Employee Benefits	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Group Insurance	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Benefits	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Support Services	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Contract Services	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Building Maintenance & Services	$ 60	B	Pumping	$ -	$ 60	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 60	$ -
Telelcommunications	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Office Supplies	$ 602	B	Pumping	$ -	$ 602	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 602	$ -
Employee Related Expenses	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Miscellaneous	$ (118,451)	B	Pumping	**$ -**	**$ (118,451)**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ (118,451)**	**$ -**
Rents	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Transportation	$ 15,771	B	Pumping	$ -	$ 15,771	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,771	$ -
Uncollectible Accounts	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Customer Accounting	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Regulatory Expense	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Insurance Other Than Group	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ 5,455,902			$ -	$ 5,455,902	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,455,902	$ -
Maintenance Expense															
Salaries and Wages	$ 5,903,083	B	Pumping	$ -	$ 5,903,083	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,903,083	$ -
Engineered Coating of Steel Structures	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Maintenance	$ 2,368,970	B	Pumping	$ -	$ 2,368,970	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,368,970	$ -
	$ 8,272,053			$ -	$ 8,272,053	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,272,053	$ -
Total Pumping Expense	**$ 13,727,954**			**$ -**	**$ 13,727,954**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 13,727,954**	**$ -**
Water Treatment															
Operating Expense															
Purchased Water	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Fuel and Power	$ 3,588,927	C	Water Treatment	$ -	$ -	$ 3,588,927	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,588,927	$ -
Chemicals	$ 15,970,707	C	Water Treatment	$ -	$ -	$ 15,970,707	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,970,707	$ -
Waste Disposal	$ 4,522,769	C	Water Treatment	$ -	$ -	$ 4,522,769	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,522,769	$ -
Salaries and Wages	$ 2,695,632	C	Water Treatment	$ -	$ -	$ 2,695,632	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,695,632	$ -
Employee Benefits	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Group Insurance	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Benefits	$ 10,853	C	Water Treatment	$ -	$ -	$ 10,853	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,853	$ -
Support Services	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Contract Services	$ 404,104	C	Water Treatment	$ -	$ -	$ 404,104	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 404,104	$ -
Building Maintenance & Services	$ 921,912	C	Water Treatment	$ -	$ -	$ 921,912	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 921,912	$ -
Telelcommunications	$ 6,421	C	Water Treatment	$ -	$ -	$ 6,421	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,421	$ -
Office Supplies	$ 148,203	C	Water Treatment	$ -	$ -	$ 148,203	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 148,203	$ -
Employee Related Expenses	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Miscellaneous	$ 1,170,842	C	Water Treatment	**$ -**	**$ -**	**$ 1,170,842**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,170,842**	**$ -**
Rents	$ 32,773	C	Water Treatment	$ -	$ -	$ 32,773	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 32,773	$ -

New Jersey-American Water Company
2022 Cost of Service Study - Account Detail

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Transportation	$ 468	C	Water Treatment	$ -	$ -	$ 468	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 468	$ -
Uncollectible Accounts	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Customer Accounting	$ 27,614	C	Water Treatment	$ -	$ -	$ 27,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 27,614	$ -
Regulatory Expense	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Insurance Other Than Group	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ 29,501,225			$ -	$ -	$ 29,501,225	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 29,501,225	$ -
Maintenance Expense															
Salaries and Wages	$ 406,317	C	Water Treatment	$ -	$ -	$ 406,317	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 406,317	$ -
Engineered Coating of Steel Structures	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Maintenance	$ 2,078,501	C	Water Treatment	$ -	$ -	$ 2,078,501	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,078,501	$ -
	$ 2,484,818			$ -	$ -	$ 2,484,818	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,484,818	$ -
Total Water Treatment Expense	**$ 31,986,044**			**$ -**	**$ -**	**$ 31,986,044**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 31,986,044**	**$ -**
Transmission & Distribution Expense															
Operating Expense															
Fuel and Power	$ 2,465,387	K	Mains	$ -	$ -	$ -	$ 1,221,144	$ 1,244,243	$ -	$ -	$ -	$ -	$ -	$ 2,465,387	$ -
Chemicals	$ -	1	T/D Oper. Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Waste Disposal	$ -	1	T/D Oper. Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Salaries and Wages	$ 673,885	1	T/D Oper. Expense	$ -	$ -	$ -	$ 333,127	$ 339,429	$ 1,329	$ -	$ -	$ -	$ -	$ 673,885	$ -
Employee Benefits	$ -	1	T/D Oper. Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Group Insurance	$ -	1	T/D Oper. Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Benefits	$ 3,300	1	T/D Oper. Expense	$ -	$ -	$ -	$ 1,631	$ 1,662	$ 7	$ -	$ -	$ -	$ -	$ 3,300	$ -
Support Services	$ -	1	T/D Oper. Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Contract Services	$ 4,805,559	1	T/D Oper. Expense	$ -	$ -	$ -	$ 2,375,572	$ 2,420,508	$ 9,479	$ -	$ -	$ -	$ -	$ 4,805,559	$ -
Building Maintenance & Services	$ 490,068	1	T/D Oper. Expense	$ -	$ -	$ -	$ 242,259	$ 246,842	$ 967	$ -	$ -	$ -	$ -	$ 490,068	$ -
Telelcommunications	$ 18,230	1	T/D Oper. Expense	$ -	$ -	$ -	$ 9,012	$ 9,182	$ 36	$ -	$ -	$ -	$ -	$ 18,230	$ -
Office Supplies	$ 332,584	1	T/D Oper. Expense	$ -	$ -	$ -	$ 164,409	$ 167,519	$ 656	$ -	$ -	$ -	$ -	$ 332,584	$ -
Employee Related Expenses	$ -	1	T/D Oper. Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Miscellaneous	$ 679,341	1	T/D Oper. Expense	$ -	$ -	$ -	$ 335,824	$ 342,177	$ 1,340	$ -	$ -	$ -	$ -	$ 679,341	$ -
Rents	$ 325,888	1	T/D Oper. Expense	$ -	$ -	$ -	$ 161,099	$ 164,146	$ 643	$ -	$ -	$ -	$ -	$ 325,888	$ -
Transportation	$ 12,133	1	T/D Oper. Expense	$ -	$ -	$ -	$ 5,998	$ 6,111	$ 24	$ -	$ -	$ -	$ -	$ 12,133	$ -
Uncollectible Accounts	$ -	1	T/D Oper. Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Customer Accounting	$ 2,651	1	T/D Oper. Expense	$ -	$ -	$ -	$ 1,310	$ 1,335	$ 5	$ -	$ -	$ -	$ -	$ 2,651	$ -
Regulatory Expense	$ -	1	T/D Oper. Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Insurance Other Than Group	$ -	1	T/D Oper. Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ 9,809,026			$ -	$ -	$ -	$ 4,851,386	$ 4,943,155	$ 14,485	$ -	$ -	$ -	$ -	$ 9,809,026	$ -
Maintenance Expense															
Salaries and Wages	$ 2,732,647	2	T/D Maint.. Expense	$ -	$ -	$ -	$ 395,873	$ 403,362	$ 1,468,521	$ 3,328	$ 259,535	$ -	$ 202,029	$ 2,732,647	$ -
Engineered Coating of Steel Structures	$ -	2	T/D Maint.. Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Maintenance	$ 7,966,519	2	T/D Maint.. Expense	$ -	$ -	$ -	$ 1,154,095	$ 1,175,926	$ 4,281,196	$ 9,701	$ 756,625	$ -	$ 588,976	$ 7,966,519	$ -
	$ 10,699,166			$ -	$ -	$ -	$ 1,549,968	$ 1,579,287	$ 5,749,717	$ 13,028	$ 1,016,160	$ -	$ 791,005	$ 10,699,166	$ -
Total T&D Expense	**$ 20,508,192**			**$ -**	**$ -**	**$ -**	**$ 6,401,354**	**$ 6,522,442**	**$ 5,764,202**	**$ 13,028**	**$ 1,016,160**	**$ -**	**$ 791,005**	**$ 20,508,192**	**$ -**
General Mains Expense															
Maintenance Expense															
Salaries and Wages	$ 3,172,446	K	Mains	$ -	$ -	$ -	$ 1,571,361	$ 1,601,085	$ -	$ -	$ -	$ -	$ -	$ 3,172,446	$ -
Engineered Coating of Steel Structures	$ -	K	Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Maintenance	$ 605,393	K	Mains	$ -	$ -	$ -	$ 299,860	$ 305,532	$ -	$ -	$ -	$ -	$ -	$ 605,393	$ -
	$ 3,777,839			$ -	$ -	$ -	$ 1,871,221	$ 1,906,617	$ -	$ -	$ -	$ -	$ -	$ 3,777,839	$ -
General Mains Expense	**$ 3,777,839**			**$ -**	**$ -**	**$ -**	**$ 1,871,221**	**$ 1,906,617**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,777,839**	**$ -**
Storage Expense															
Operating Expense															
Salaries and Wages	$ -	F	Storage	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Miscellaneous	$ 4,873	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 4,873	$ -	$ -	$ -	$ -	$ 4,873	$ -
	$ 4,873			$ -	$ -	$ -	$ -	$ -	$ 4,873	$ -	$ -	$ -	$ -	$ 4,873	$ -
Maintenance Expense															
Engineered Coating of Steel Structures	$ 6,941,429	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 6,941,429	$ -	$ -	$ -	$ -	$ 6,941,429	$ -
Maintenance	$ -	F	Storage	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ 6,941,429			$ -	$ -	$ -	$ -	$ -	$ 6,941,429	$ -	$ -	$ -	$ -	$ 6,941,429	$ -
Total Storage Expense	**$ 6,946,301**			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 6,946,301**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 6,946,301**	**$ -**
Meter Expense															
Operating Expense															
Salaries and Wages	$ -	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Telelcommunications	$ -	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ -			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Maintenance Expense															
Salaries and Wages	$ 1,111	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,111	$ -	$ -	$ -	$ 1,111	$ -
Maintenance	$ 14,618	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 14,618	$ -	$ -	$ -	$ 14,618	$ -
	$ 15,729			$ -	$ -	$ -	$ -	$ -	$ -	$ 15,729	$ -	$ -	$ -	$ 15,729	$ -
Total Meter Expense	**$ 15,729**			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 15,729**	**$ -**	**$ -**	**$ -**	**$ 15,729**	**$ -**
Service Expense															

New Jersey-American Water Company
2022 Cost of Service Study - Account Detail

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Operating Expense															
Salaries and Wages	$ -	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ -			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Maintenance Expense															
Salaries and Wages	$ 1,000,519	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,000,519	$ -	$ -	$ 1,000,519	$ -
Maintenance	$ 226,255	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 226,255	$ -	$ -	$ 226,255	$ -
	$ 1,226,774			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,226,774	$ -	$ -	$ 1,226,774	$ -
Total Service Expense	**$ 1,226,774**			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,226,774**	**$ -**	**$ -**	**$ 1,226,774**	**$ -**
Hydrant Expense															
Maintenance Expense															
Salaries and Wages	$ 833,031	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 833,031	$ 833,031	$ -
Maintenance	$ 121,921	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 121,921	$ 121,921	$ -
	$ 954,952			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 954,952	$ 954,952	$ -
Hydrant Expense	**$ 954,952**			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 954,952**	**$ 954,952**	**$ -**
Customer Accounts															
Salaries and Wages	$ 3,416,302	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,416,302	$ -	$ 3,416,302	$ -
Employee Benefits	$ -	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Group Insurance	$ -	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Benefits	$ 9,149	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 9,149	$ -	$ 9,149	$ -
Support Services	$ -	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Contract Services	$ 32,148	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 32,148	$ -	$ 32,148	$ -
Building Maintenance & Services	$ 32,710	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 32,710	$ -	$ 32,710	$ -
Telelcommunications	$ 44,866	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 44,866	$ -	$ 44,866	$ -
Office Supplies	$ 25,662	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 25,662	$ -	$ 25,662	$ -
Employee Related Expenses	$ -	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Miscellaneous	$ 1,186	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,186	$ -	$ 1,186	$ -
Rents	$ 3,232	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,232	$ -	$ 3,232	$ -
Transportation	$ -	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Uncollectible Accounts	$ 3,696,175	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,696,175	$ -	$ 3,696,175	$ -
Customer Accounting	$ 6,760,987	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,760,987	$ -	$ 6,760,987	$ -
Regulatory Expense	$ -	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Insurance Other Than Group	$ -	I	Customers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ 14,022,418			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 14,022,418	$ -	$ 14,022,418	$ -
Total Customer Accounting Expense	**$ 14,022,418**			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 14,022,418**	**$ -**	**$ 14,022,418**	**$ -**
Administrative & General Expense															
Operating Expense															
Fuel and Power	$ 58,187	3	Fixed O&M	$ 2,461	$ 7,456	$ 7,213	$ 6,435	$ 6,557	$ 11,600	$ 26	$ 2,047	$ 12,797	$ 1,593	$ 58,187	$ -
Salaries and Wages	$ 28,461,946	4	Labor	$ 863,068	$ 7,819,471	$ 4,108,971	$ 3,047,156	$ 3,104,796	$ 1,947,025	$ 5,880	$ 1,669,120	$ 4,525,377	$ 1,371,083	$ 28,461,946	$ -
Employee Benefits	$ (3,149,845)	4	Labor	$ (95,515)	$ (865,370)	$ (454,734)	$ (337,225)	$ (343,604)	$ (215,475)	$ (651)	$ (184,719)	$ (500,817)	$ (151,736)	$ (3,149,845)	$ -
Group Insurance	$ 8,275,911	3	Fixed O&M	$ 350,026	$ 1,060,502	$ 1,025,923	$ 915,303	$ 932,617	$ 1,649,872	$ 3,733	$ 291,142	$ 1,820,163	$ 226,632	$ 8,275,911	$ -
Other Benefits	$ 3,262,079	3	Fixed O&M	$ 137,968	$ 418,013	$ 404,383	$ 360,781	$ 367,605	$ 650,323	$ 1,471	$ 114,758	$ 717,446	$ 89,330	$ 3,262,079	$ -
Support Services	$ 48,553,529	3	Fixed O&M	$ 2,053,550	$ 6,221,805	$ 6,018,934	$ 5,369,944	$ 5,471,522	$ 9,679,550	$ 21,900	$ 1,708,084	$ 10,678,626	$ 1,329,615	$ 48,553,529	$ -
Contract Services	$ 3,425,154	3	Fixed O&M	$ 144,865	$ 438,910	$ 424,599	$ 378,817	$ 385,982	$ 682,833	$ 1,545	$ 120,495	$ 753,312	$ 93,796	$ 3,425,154	$ -
Building Maintenance & Services	$ 534,571	3	Fixed O&M	$ 22,609	$ 68,502	$ 66,268	$ 59,123	$ 60,241	$ 106,571	$ 241	$ 18,806	$ 117,571	$ 14,639	$ 534,571	$ -
Telelcommunications	$ 3,314,992	3	Fixed O&M	$ 140,206	$ 424,794	$ 410,943	$ 366,633	$ 373,568	$ 660,871	$ 1,495	$ 116,619	$ 729,083	$ 90,779	$ 3,314,992	$ -
Office Supplies	$ 2,176,555	3	Fixed O&M	$ 92,056	$ 278,911	$ 269,816	$ 240,724	$ 245,277	$ 433,914	$ 982	$ 76,570	$ 478,701	$ 59,604	$ 2,176,555	$ -
Employee Related Expenses	$ 1,083,140	3	Fixed O&M	$ 45,811	$ 138,797	$ 134,271	$ 119,794	$ 122,060	$ 215,933	$ 489	$ 38,104	$ 238,220	$ 29,661	$ 1,083,140	$ -
Miscellaneous	$ 2,137,034	3	Fixed O&M	$ 90,385	$ 273,846	$ 264,917	$ 236,353	$ 240,823	$ 426,035	$ 964	$ 75,180	$ 470,009	$ 58,522	$ 2,137,034	$ -
Rents	$ 105,657	3	Fixed O&M	$ 4,469	$ 13,539	$ 13,098	$ 11,685	$ 11,907	$ 21,064	$ 48	$ 3,717	$ 23,238	$ 2,893	$ 105,657	$ -
Transportation	$ 3,550,445	3	Fixed O&M	$ 150,164	$ 454,965	$ 440,131	$ 392,674	$ 400,101	$ 707,811	$ 1,601	$ 124,902	$ 780,867	$ 97,227	$ 3,550,445	$ -
Uncollectible Accounts	$ (194,452)	3	Fixed O&M	$ (8,224)	$ (24,918)	$ (24,105)	$ (21,506)	$ (21,913)	$ (38,766)	$ (88)	$ (6,841)	$ (42,767)	$ (5,325)	$ (194,452)	$ -
Customer Accounting	$ 203,788	3	Fixed O&M	$ 8,619	$ 26,114	$ 25,263	$ 22,539	$ 22,965	$ 40,627	$ 92	$ 7,169	$ 44,820	$ 5,581	$ 203,788	$ -
Regulatory Expense	$ 557,433	3	Fixed O&M	$ 23,576	$ 71,431	$ 69,102	$ 61,651	$ 62,817	$ 111,129	$ 251	$ 19,610	$ 122,599	$ 15,265	$ 557,433	$ -
Insurance Other Than Group	$ 9,070,183	3	Fixed O&M	$ 383,619	$ 1,162,282	$ 1,124,385	$ 1,003,148	$ 1,022,124	$ 1,808,217	$ 4,091	$ 319,084	$ 1,994,852	$ 248,383	$ 9,070,183	$ -
	$ 111,426,306			$ 4,409,715	$ 17,989,051	$ 14,329,378	$ 12,234,026	$ 12,465,446	$ 18,899,134	$ 44,070	$ 4,513,846	$ 22,964,096	$ 3,577,543	$ 111,426,306	$ -
Maintenance Expense															
Salaries and Wages	$ 144,775	3	Fixed O&M	$ 6,123	$ 18,552	$ 17,947	$ 16,012	$ 16,315	$ 28,862	$ 65	$ 5,093	$ 31,841	$ 3,965	$ 144,775	$ -
Maintenance	$ 2,073,784	3	Fixed O&M	$ 87,710	$ 265,741	$ 257,077	$ 229,357	$ 233,696	$ 413,426	$ 935	$ 72,954	$ 456,098	$ 56,790	$ 2,073,784	$ -
	$ 2,218,559			$ 93,833	$ 284,293	$ 275,024	$ 245,369	$ 250,011	$ 442,288	$ 1,001	$ 78,048	$ 487,939	$ 60,754	$ 2,218,559	$ -
Total A&G Expense	**$ 113,644,865**			**$ 4,503,548**	**$ 18,273,344**	**$ 14,604,401**	**$ 12,479,395**	**$ 12,715,456**	**$ 19,341,422**	**$ 45,071**	**$ 4,591,894**	**$ 23,452,035**	**$ 3,638,297**	**$ 113,644,865**	**$ -**
Total Operations & Maintenace Exp. (Water)	**$ 220,384,243**			**$ 18,076,723**	**$ 32,001,299**	**$ 46,590,445**	**$ 20,751,970**	**$ 21,144,516**	**$ 32,051,926**	**$ 73,828**	**$ 6,834,829**	**$ 37,474,454**	**$ 5,384,254**	**$ 220,384,243**	**$ -**
Total Operations & Maintenace Exp. (Sewer)	**$ 9,753,008**														
Taxes Other Than Income Tax															
Property Taxes	$ 6,736,206	5	Net Plant (less gen. and int.)	$ 296,132	$ 320,115	$ 914,898	$ 1,555,027	$ 1,844,756	$ 180,685	$ 431,902	$ 843,668	$ 86,478	$ 262,546	$ 6,736,206	$ -
Payroll Taxes	$ 3,924,581	4	Labor	$ 119,007	$ 1,078,217	$ 566,581	$ 420,168	$ 428,116	$ 268,473	$ 811	$ 230,153	$ 623,998	$ 189,057	$ 3,924,581	$ -
Gross Receipts and Surtax	$ 115,698,257	6	Rate Base	$ 5,436,157	$ 5,968,894	$ 16,777,874	$ 24,568,022	$ 29,716,540	$ 3,759,603	$ 7,691,554	$ 14,949,488	$ 2,117,048	$ 4,713,076	$ 115,698,257	$ -
BPU/DRC Assessment	$ 2,318,526	6	Rate Base	$ 108,937	$ 119,613	$ 336,219	$ 492,329	$ 595,502	$ 75,340	$ 154,134	$ 299,579	$ 42,424	$ 94,447	$ 2,318,526	$ -
Water Monitoring Tax	$ 634,308	6	Rate Base	$ 29,803	$ 32,724	$ 91,984	$ 134,693	$ 162,919	$ 20,612	$ 42,168	$ 81,960	$ 11,607	$ 25,839	$ 634,308	$ -
Other Taxes	$ 76,548	6	Rate Base	$ 3,597	$ 3,949	$ 11,100	$ 16,255	$ 19,661	$ 2,487	$ 5,089	$ 9,891	$ 1,401	$ 3,118	$ 76,548	$ -
	$ 129,388,426			$ 5,993,634	$ 7,523,512	$ 18,698,655	$ 27,186,494	$ 32,767,494	$ 4,307,200	$ 8,325,658	$ 16,414,738	$ 2,882,957	$ 5,288,084	$ 129,388,426	$ -
Total Taxes Other Than Income Taxes (Water)	**$ 129,388,426**			**$ 5,993,634**	**$ 7,523,512**	**$ 18,698,655**	**$ 27,186,494**	**$ 32,767,494**	**$ 4,307,200**	**$ 8,325,658**	**$ 16,414,738**	**$ 2,882,957**	**$ 5,288,084**	**$ 129,388,426**	**$ -**

New Jersey-American Water Company
2022 Cost of Service Study - Account Detail

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Total Taxes Other Than Income Taxes (Sewer)	**$ 6,198,744**														
Plant Depreciation															
Intangible Plant															
Organization	$ -	5	Net Plant (less gen. and int.)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Franchises	$ -	5	Net Plant (less gen. and int.)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other P/E-Intangible	$ 115,617	5	Net Plant (less gen. and int.)	$ 5,083	$ 5,494	$ 15,703	$ 26,690	$ 31,663	$ 3,101	$ 7,413	$ 14,480	$ 1,484	$ 4,506	$ 115,617	$ -
Source of Supply															
Land & Land Rights-Supply	$ -	A	Source of Supply	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Struct & Imp-Supply	$ 2,054,018	A	Source of Supply	$ 2,054,018	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,054,018	$ -
Collect & Impound Reservoirs	$ 383,758	A	Source of Supply	$ 383,758	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 383,758	$ -
Lake, River & Other Intakes	$ 35,153	A	Source of Supply	$ 35,153	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 35,153	$ -
Wells & Springs	$ 1,360,030	A	Source of Supply	$ 1,360,030	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,360,030	$ -
Supply Mains	$ 350,136	A	Source of Supply	$ 350,136	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 350,136	$ -
Infiltratn Galleries & Tunne	$ 111,097	A	Source of Supply	$ 111,097	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 111,097	$ -
Other P/E-Supply	$ 21,806	A	Source of Supply	$ 21,806	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 21,806	$ -
Water Pumping															
Land & Land Rights-Pumping	$ -	B	Pumping	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Struct & Imp-Pumping	$ 1,238,670	B	Pumping	$ -	$ 1,238,670	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,238,670	$ -
Boiler Plant Equip P	$ 14,621	B	Pumping	$ -	$ 14,621	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 14,621	$ -
Power Generation Equip	$ 795,243	B	Pumping	$ -	$ 795,243	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 795,243	$ -
Pump Eqp Electric	$ 3,314,058	B	Pumping	$ -	$ 3,314,058	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,314,058	$ -
Pump Eqp Diesel	$ 722,924	B	Pumping	$ -	$ 722,924	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 722,924	$ -
Pump Eqp Hydraulic	$ 497,999	B	Pumping	$ -	$ 497,999	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 497,999	$ -
Pump Eqp Other	$ 331,179	B	Pumping	$ -	$ 331,179	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 331,179	$ -
Water Treatment															
Land & Land Rights-Treatment	$ -	C	Water Treatment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Struct & Imp-Treatment	$ 5,228,317	C	Water Treatment	$ -	$ -	$ 5,228,317	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,228,317	$ -
Struct & Imp-Treatment-Handl	$ 146,529	C	Water Treatment	$ -	$ -	$ 146,529	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 146,529	$ -
Other P/E-Treatment	$ 23,089	C	Water Treatment	$ -	$ -	$ 23,089	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 23,089	$ -
Other P/E-WT Res Hand Equip	$ 108,286	C	Water Treatment	$ -	$ -	$ 108,286	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 108,286	$ -
WT Equip Non-Media	$ 11,344,685	C	Water Treatment	$ -	$ -	$ 11,344,685	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 11,344,685	$ -
WT Equip Filter Media	$ 3,780,252	C	Water Treatment	$ -	$ -	$ 3,780,252	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,780,252	$ -
Pumping Equipment WT	$ 3,436	C	Water Treatment	$ -	$ -	$ 3,436	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,436	$ -
T&D															
Land & Land Rights-T&D	$ -	K	Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Struct & Imp-T&D	$ 667,225	K	Mains	$ -	$ -	$ -	$ 330,487	$ 336,738	$ -	$ -	$ -	$ -	$ -	$ 667,225	$ -
TD Mains Not Classified	$ 5,962,610	K	Mains	$ -	$ -	$ -	$ 2,953,372	$ 3,009,238	$ -	$ -	$ -	$ -	$ -	$ 5,962,610	$ -
TD Mains 4in & Less	$ 1,502,479	E	Distribution	$ -	$ -	$ -	$ -	$ 1,502,479	$ -	$ -	$ -	$ -	$ -	$ 1,502,479	$ -
TD Mains 6in to 8in	$ 16,606,267	E	Distribution	$ -	$ -	$ -	$ -	$ 16,606,267	$ -	$ -	$ -	$ -	$ -	$ 16,606,267	$ -
TD Mains 10in to 16in	$ 6,897,974	D	Transmission	$ -	$ -	$ -	$ 6,897,974	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,897,974	$ -
TD Mains 18in & Grtr	$ 3,359,364	D	Transmission	$ -	$ -	$ -	$ 3,359,364	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,359,364	$ -
Fire Mains	$ 213,588	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 213,588	$ 213,588	$ -
Pumping Equipment TD	$ 445	K	Mains	$ -	$ -	$ -	$ 220	$ 225	$ -	$ -	$ -	$ -	$ -	$ 445	$ -
Other P/E-TD	$ 115,672	K	Mains	$ -	$ -	$ -	$ 57,294	$ 58,378	$ -	$ -	$ -	$ -	$ -	$ 115,672	$ -
Storage															
Below Ground Tanks	$ 59,298	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 59,298	$ -	$ -	$ -	$ -	$ 59,298	$ -
Clearwell	$ 934	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 934	$ -	$ -	$ -	$ -	$ 934	$ -
Dist Reservoirs & Standpipes	$ 412,685	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 412,685	$ -	$ -	$ -	$ -	$ 412,685	$ -
Elevated Tanks & Standpipes	$ 721,357	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 721,357	$ -	$ -	$ -	$ -	$ 721,357	$ -
Ground Level Tanks	$ 123,075	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 123,075	$ -	$ -	$ -	$ -	$ 123,075	$ -
Tank Original Painting	$ 1,082	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 1,082	$ -	$ -	$ -	$ -	$ 1,082	$ -
Meters															
Meters	$ 12,660,867	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,660,867	$ -	$ -	$ -	$ 12,660,867	$ -
Meter Installations	$ 14,552,045	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 14,552,045	$ -	$ -	$ -	$ 14,552,045	$ -
Meter Vaults	$ 5,516,033	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,516,033	$ -	$ -	$ -	$ 5,516,033	$ -
Services															
Services	$ 15,502,654	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,502,654	$ -	$ -	$ 15,502,654	$ -
Backflow Prevention Devices	$ 4,319	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,319	$ -	$ -	$ 4,319	$ -
Hydrants															
Hydrants	$ 5,986,802	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,986,802	$ 5,986,802	$ -
General Plant															
Comm Equip Non-Telephone	$ 282,964	3	Fixed O&M	$ 11,968	$ 36,260	$ 35,078	$ 31,295	$ 31,887	$ 56,411	$ 128	$ 9,955	$ 62,234	$ 7,749	$ 282,964	$ -
Comm Equip Not Classified	$ 1,279,090	3	Fixed O&M	$ 54,099	$ 163,907	$ 158,562	$ 141,465	$ 144,141	$ 254,997	$ 577	$ 44,998	$ 281,317	$ 35,027	$ 1,279,090	$ -
Comm Equip Telephone	$ 51,873	3	Fixed O&M	$ 2,194	$ 6,647	$ 6,430	$ 5,737	$ 5,846	$ 10,341	$ 23	$ 1,825	$ 11,409	$ 1,421	$ 51,873	$ -
Comp & Periph Equip	$ 1,609,561	3	Fixed O&M	$ 68,076	$ 206,254	$ 199,529	$ 178,015	$ 181,382	$ 320,879	$ 726	$ 56,623	$ 353,999	$ 44,077	$ 1,609,561	$ -
Comp Software Mainframe	$ -	3	Fixed O&M	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Computer Software	$ 18,538,512	3	Fixed O&M	$ 784,078	$ 2,375,584	$ 2,298,125	$ 2,050,330	$ 2,089,114	$ 3,695,807	$ 8,362	$ 652,174	$ 4,077,270	$ 507,668	$ 18,538,512	$ -
Data Handling Equipment	$ 1,603	3	Fixed O&M	$ 68	$ 205	$ 199	$ 177	$ 181	$ 320	$ 1	$ 56	$ 353	$ 44	$ 1,603	$ -
Laboratory Equipment	$ 436,634	C	Water Treatment	$ -	$ -	$ 436,634	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 436,634	$ -
Land & Land Rights-General	$ -	3	Fixed O&M	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Misc Equipment	$ 1,243,599	3	Fixed O&M	$ 52,597	$ 159,359	$ 154,163	$ 137,540	$ 140,142	$ 247,922	$ 561	$ 43,749	$ 273,511	$ 34,055	$ 1,243,599	$ -
Office Furniture & Equip	$ 777,613	3	Fixed O&M	$ 32,889	$ 99,646	$ 96,397	$ 86,003	$ 87,630	$ 155,024	$ 351	$ 27,356	$ 171,024	$ 21,295	$ 777,613	$ -
Other Office Equipment	$ 578	3	Fixed O&M	$ 24	$ 74	$ 72	$ 64	$ 65	$ 115	$ 0	$ 20	$ 127	$ 16	$ 578	$ -

New Jersey-American Water Company
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	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Other P/E-CPS	$ 2,068,307	3	Fixed O&M	$ 87,478	$ 265,039	$ 256,397	$ 228,751	$ 233,079	$ 412,334	$ 933	$ 72,762	$ 454,893	$ 56,640	$ 2,068,307	$ -
Other Tangible Property	$ 92,554	3	Fixed O&M	$ 3,915	$ 11,860	$ 11,473	$ 10,236	$ 10,430	$ 18,451	$ 42	$ 3,256	$ 20,356	$ 2,535	$ 92,554	$ -
Power Operated Equipment	$ 211,330	3	Fixed O&M	$ 8,938	$ 27,081	$ 26,198	$ 23,373	$ 23,815	$ 42,130	$ 95	$ 7,434	$ 46,479	$ 5,787	$ 211,330	$ -
Remote Control & Instrument	$ 1,519,865	3	Fixed O&M	$ 64,282	$ 194,760	$ 188,410	$ 168,095	$ 171,274	$ 302,998	$ 686	$ 53,468	$ 334,272	$ 41,621	$ 1,519,865	$ -
Stores Equipment	$ 144,904	3	Fixed O&M	$ 6,129	$ 18,568	$ 17,963	$ 16,026	$ 16,329	$ 28,888	$ 65	$ 5,098	$ 31,869	$ 3,968	$ 144,904	$ -
Struct & Imp-Cap Lease	$ 380	3	Fixed O&M	$ 16	$ 49	$ 47	$ 42	$ 43	$ 76	$ 0	$ 13	$ 84	$ 10	$ 380	$ -
Struct & Imp-General	$ 3,276,484	3	Fixed O&M	$ 138,577	$ 419,859	$ 406,169	$ 362,374	$ 369,229	$ 653,194	$ 1,478	$ 115,265	$ 720,614	$ 89,725	$ 3,276,484	$ -
Struct & Imp-HVAC	$ 33,692	3	Fixed O&M	$ 1,425	$ 4,317	$ 4,177	$ 3,726	$ 3,797	$ 6,717	$ 15	$ 1,185	$ 7,410	$ 923	$ 33,692	$ -
Struct & Imp-Misc	$ 51,857	3	Fixed O&M	$ 2,193	$ 6,645	$ 6,428	$ 5,735	$ 5,844	$ 10,338	$ 23	$ 1,824	$ 11,405	$ 1,420	$ 51,857	$ -
Struct & Imp-Offices	$ 304,637	3	Fixed O&M	$ 12,884	$ 39,037	$ 37,764	$ 33,692	$ 34,330	$ 60,732	$ 137	$ 10,717	$ 67,000	$ 8,342	$ 304,637	$ -
Struct & Imp-Store,Shop,Gar	$ 207,778	3	Fixed O&M	$ 8,788	$ 26,625	$ 25,757	$ 22,980	$ 23,415	$ 41,422	$ 94	$ 7,310	$ 45,698	$ 5,690	$ 207,778	$ -
Tools,Shop,Garage Equip	$ 1,054,458	3	Fixed O&M	$ 44,598	$ 135,122	$ 130,716	$ 116,621	$ 118,827	$ 210,215	$ 476	$ 37,095	$ 231,912	$ 28,876	$ 1,054,458	$ -
Trans Equip Autos	$ 186,734	3	Fixed O&M	$ 7,898	$ 23,929	$ 23,148	$ 20,652	$ 21,043	$ 37,227	$ 84	$ 6,569	$ 41,069	$ 5,114	$ 186,734	$ -
Trans Equip Hvy Duty Trks	$ 1,214,294	3	Fixed O&M	$ 51,358.04	$ 155,604	$ 150,530	$ 134,299	$ 136,839	$ 242,080	$ 548	$ 42,718	$ 267,066	$ 33,253	$ 1,214,294	$ -
Trans Equip Lt Duty Trks	$ (459,055)	3	Fixed O&M	$ (19,416)	$ (58,825)	$ (56,907)	$ (50,771)	$ (51,731)	$ (91,516)	$ (207)	$ (16,149)	$ (100,962)	$ (12,571)	$ (459,055)	$ -
Trans Equip Not Classified	$ 51,819	3	Fixed O&M	$ 2,192	$ 6,640	$ 6,424	$ 5,731	$ 5,840	$ 10,331	$ 23	$ 1,823	$ 11,397	$ 1,419	$ 51,819	$ -
Trans Equip Other	$ 367,455	3	Fixed O&M	$ 15,541	$ 47,087	$ 45,552	$ 40,640	$ 41,409	$ 73,255	$ 166	$ 12,927	$ 80,816	$ 10,063	$ 367,455	$ -
Plant Depreciation (Water)	$ 157,397,203			$ 5,763,870	$ 11,291,522	$ 25,315,734	$ 17,398,233	$ 25,389,186	$ 8,122,222	$ 32,751,745	$ 16,721,524	$ 7,504,106	$ 7,139,061	$ 157,397,203	$ -
Vehicle Depr Expense Capitalize Portion	$ (646,000)	3	Fixed O&M	$ (27,322)	$ (82,781)	$ (80,081)	$ (71,447)	$ (72,798)	$ (128,785)	$ (291)	$ (22,726)	$ (142,078)	$ (17,690)	$ (646,000)	$ -
UOP Property	$ 4,116,738	3	Fixed O&M	$ 174,116	$ 527,532	$ 510,331	$ 455,305	$ 463,917	$ 820,706	$ 1,857	$ 144,824	$ 905,415	$ 112,735	$ 4,116,738	$ -
Boundbrook WW Acq Plant Depreciation	$ 93,905	3	Fixed O&M	$ 3,972	$ 12,033	$ 11,641	$ 10,386	$ 10,582	$ 18,721	$ 42	$ 3,304	$ 20,653	$ 2,572	$ 93,905	$ -
Plant Depreciation (Sewer)	$ 7,207,621	5	Net Plant (less gen. and int.)	$ 316,856	$ 342,517	$ 978,924	$ 1,663,852	$ 1,973,856	$ 193,330	$ 462,127	$ 902,710	$ 92,530	$ 280,920	$ 7,207,621	$ -
Total Depreciation Expense	**$ 168,169,469**			**$ 6,231,491**	**$ 12,090,825**	**$ 26,736,549**	**$ 19,456,328**	**$ 27,764,744**	**$ 9,026,193**	**$ 33,215,480**	**$ 17,749,636**	**$ 8,380,627**	**$ 7,517,597**	**$ 168,169,469**	**$ -**
Amortization Expense															
Advances for Construction - Non Taxable Mains	$ (13,641)	K	Mains	$ -	$ -	$ -	$ (6,756)	$ (6,884)	$ -	$ -	$ -	$ -	$ -	$ (13,641)	$ -
Advances for Construction - Non Taxable Ext Deposits	$ (395,578)	K	Mains	$ -	$ -	$ -	$ (195,936)	$ (199,642)	$ -	$ -	$ -	$ -	$ -	$ (395,578)	$ -
Advances for Construction - Non Taxable Hydrants	$ -	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Advances for Construction - Non Taxable Other	$ -	K	Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Advances for Construction - Taxable Mains	$ (381,937)	K	Mains	$ -	$ -	$ -	$ (189,179)	$ (192,758)	$ -	$ -	$ -	$ -	$ -	$ (381,937)	$ -
Advances for Construction - Taxable Ext Dep	$ (54,562)	K	Mains	$ -	$ -	$ -	$ (27,026)	$ (27,537)	$ -	$ -	$ -	$ -	$ -	$ (54,562)	$ -
Advances for Construction - Taxable Services	$ (52,150)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (52,150)	$ -	$ -	$ (52,150)	$ -
Advances for Construction - Taxable Meters	$ (32,937)	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ (32,937)	$ -	$ -	$ -	$ (32,937)	$ -
Advances for Construction - Taxable Hydrants	$ (24,287)	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (24,287)	$ (24,287)	$ -
Advances for Construction - Taxable Mains FIT	$ (381,937)	K	Mains	$ -	$ -	$ -	$ (189,179)	$ (192,758)	$ -	$ -	$ -	$ -	$ -	$ (381,937)	$ -
Advances for Construction - Taxable Services FIT	$ (52,150)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (52,150)	$ -	$ -	$ (52,150)	$ -
Advances for Construction - Taxable Meters FIT	$ (32,937)	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ (32,937)	$ -	$ -	$ -	$ (32,937)	$ -
Advances for Construction - Taxable Hydrants FIT	$ (24,287)	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (24,287)	$ (24,287)	$ -
CIAC-Non Taxable - Mains	$ (2,935,175)	K	Mains	$ -	$ -	$ -	$ (1,453,837)	$ (1,481,338)	$ -	$ -	$ -	$ -	$ -	$ (2,935,175)	$ -
CIAC-Non Taxable - Ext Dep	$ (960,963)	K	Mains	$ -	$ -	$ -	$ (475,980)	$ (484,983)	$ -	$ -	$ -	$ -	$ -	$ (960,963)	$ -
CIAC-Non Taxable - Services	$ (20,479)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (20,479)	$ -	$ -	$ (20,479)	$ -
CIAC-Non Taxable - Meters	$ (46,563)	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ (46,563)	$ -	$ -	$ -	$ (46,563)	$ -
CIAC-Non Taxable - Hydrants	$ (28,612)	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (28,612)	$ (28,612)	$ -
CIAC-Non Taxable - Other	$ (297,484)	K	Mains	$ -	$ -	$ -	$ (147,348)	$ (150,136)	$ -	$ -	$ -	$ -	$ -	$ (297,484)	$ -
CIAC-Taxable - Mains	$ (70,706)	K	Mains	$ -	$ -	$ -	$ (35,022)	$ (35,684)	$ -	$ -	$ -	$ -	$ -	$ (70,706)	$ -
CIAC-Taxable - Ext Dep	$ (32,139)	K	Mains	$ -	$ -	$ -	$ (15,919)	$ (16,220)	$ -	$ -	$ -	$ -	$ -	$ (32,139)	$ -
CIAC-Taxable - Services	$ (106,491)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (106,491)	$ -	$ -	$ (106,491)	$ -
CIAC-Taxable - Meters	$ -	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CIAC-Taxable - Hydrants	$ (5,722)	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (5,722)	$ (5,722)	$ -
CIAC-Taxable - Other	$ (38,802)	K	Mains	$ -	$ -	$ -	$ (19,219)	$ (19,583)	$ -	$ -	$ -	$ -	$ -	$ (38,802)	$ -
CIAC-Taxable - Mains FIT	$ (9,642)	K	Mains	$ -	$ -	$ -	$ (4,776)	$ (4,866)	$ -	$ -	$ -	$ -	$ -	$ (9,642)	$ -
CIAC-Taxable - Services FIT	$ (4,096)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (4,096)	$ -	$ -	$ (4,096)	$ -
CIAC-Taxable - Meters FIT	$ -	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Amort of COR	$ (1,200,000)	6	Rate Base	$ (56,383)	$ (61,908)	$ (174,017)	$ (254,815)	$ (308,214)	$ (38,994)	$ (79,775)	$ (155,053)	$ (21,958)	$ (48,883)	$ (1,200,000)	$ -
Amort. Of Plant Acquisition Adj.	$ 268,188	6	Rate Base	$ 12,601	$ 13,836	$ 38,891	$ 56,948	$ 68,883	$ 8,715	$ 17,829	$ 34,653	$ 4,907	$ 10,925	$ 268,188	$ -
Amort. Of Regulatory Asset	$ 806,329	6	Rate Base	$ 37,886	$ 41,599	$ 116,929	$ 171,220	$ 207,102	$ 26,202	$ 53,604	$ 104,187	$ 14,754	$ 32,847	$ 806,329	$ -
Amort of Pandemic Costs	$ 5,322,478	6	Rate Base	$ 250,080	$ 274,588	$ 771,834	$ 1,130,205	$ 1,367,053	$ 172,953	$ 353,835	$ 687,723	$ 97,391	$ 216,816	$ 5,322,478	$ -
Total Amortization Expense (Water)	$ (806,283)			$ 244,184	$ 268,114	$ 753,637	$ (1,656,618)	$ (1,477,566)	$ 168,876	$ 233,056	$ 436,143	$ 95,095	$ 128,796	$ (806,283)	$ -
Amortization Expense (Sewer)	$ (557,419)														
Total Amortization Expense	**$ (1,363,702)**			**$ 244,184**	**$ 268,114**	**$ 753,637**	**$ (1,656,618)**	**$ (1,477,566)**	**$ 168,876**	**$ 233,056**	**$ 436,143**	**$ 95,095**	**$ 128,796**	**$ (806,283)**	**$ -**
Total Depreciation & Amortization	**$ 166,805,767**														
Income Taxes															
Federal Income Tax															
Total Federal Taxes	$ 48,265,147	6	Rate Base	$ 2,267,769	$ 2,490,008	$ 6,999,125	$ 10,248,894	$ 12,396,671	$ 1,568,371	$ 3,208,639	$ 6,236,388	$ 883,156	$ 1,966,126	$ 48,265,147	$ -
Total Income Taxes (Water)	$ 48,265,147			$ 2,267,769	$ 2,490,008	$ 6,999,125	$ 10,248,894	$ 12,396,671	$ 1,568,371	$ 3,208,639	$ 6,236,388	$ 883,156	$ 1,966,126	$ 48,265,147	$ -
Income Taxes (Sewer)	3,034,033														
Total Income Tax Expense	**$ 51,299,181**			**$ 2,267,769**	**$ 2,490,008**	**$ 6,999,125**	**$ 10,248,894**	**$ 12,396,671**	**$ 1,568,371**	**$ 3,208,639**	**$ 6,236,388**	**$ 883,156**	**$ 1,966,126**	**$ 48,265,147**	
Required Net Operating Income (Water)	$ 304,350,598	6	Rate Base	$ 14,300,110	$ 15,701,503	$ 44,135,116	$ 64,627,527	$ 78,170,985	$ 9,889,841	$ 20,233,054	$ 39,325,446	$ 5,569,012	$ 12,398,005	$ 304,350,598	$ -
Required Net Operating Income (Sewer)	$ 14,898,292														
Required Net Operating Income	$ 319,248,890														
Other Operating Revenue (Water)	$ (5,361,623)	6	Rate Base	$ (251,919)	$ (276,607)	$ (777,511)	$ (1,138,517)	$ (1,377,107)	$ (174,225)	$ (356,438)	$ (692,781)	$ (98,107)	$ (218,411)	$ (5,361,623)	$ -
Other Operating Revenue (Sewer)	$ (15,627)														
Other Operating Revenue	$ (5,377,250)														

New Jersey-American Water Company
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	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Total Retail Revenue Requirement (Water)	**$ 862,450,073**			**$ 46,793,084**	**$ 69,720,709**	**$ 142,922,962**	**$ 138,940,359**	**$ 168,782,405**	**$ 56,800,355**	**$ 64,827,546**	**$ 86,091,167**	**$ 55,172,116**	**$ 32,399,371**	**$ 862,450,073**	**$ -**
Total Retail Revenue Requirement (Sewer)	**$ 40,628,184**			**$ 46,541,164**	**$ 69,444,102**	**$ 142,145,451**	**$ 137,801,841**	**$ 167,405,298**	**$ 56,626,130**	**$ 64,471,109**	**$ 85,398,386**	**$ 55,074,009**	**$ 32,180,960**	**$ 857,088,450**	
	$ 903,078,257														
check	**$ (0)**														
Plant Account															
Intangible Plant															
Organization	$ 619,085	5	Net Plant (less gen. and int.)	$ 27,216	$ 29,420	$ 84,083	$ 142,913	$ 169,541	$ 16,606	$ 39,694	$ 77,537	$ 7,948	$ 24,129	$ 619,085	$ -
Franchises	$ 189,755	5	Net Plant (less gen. and int.)	$ 8,342	$ 9,017	$ 25,772	$ 43,804	$ 51,966	$ 5,090	$ 12,166	$ 23,766	$ 2,436	$ 7,396	$ 189,755	$ -
Other P/E-Intangible	$ 2,701,309	5	Net Plant (less gen. and int.)	$ 118,753	$ 128,370	$ 366,886	$ 623,587	$ 739,772	$ 72,457	$ 173,198	$ 338,322	$ 34,679	$ 105,285	$ 2,701,309	$ -
Source of Supply															
Land & Land Rights-Supply	$ 10,048,381	A	Source of Supply	$ 10,048,381	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,048,381	$ -
Struct & Imp-Supply	$ 108,648,460	A	Source of Supply	$ 108,648,460	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 108,648,460	$ -
Collect & Impound Reservoirs	$ 17,923,491	A	Source of Supply	$ 17,923,491	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 17,923,491	$ -
Lake, River & Other Intakes	$ 7,384,806	A	Source of Supply	$ 7,384,806	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,384,806	$ -
Wells & Springs	$ 39,207,974	A	Source of Supply	$ 39,207,974	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 39,207,974	$ -
Supply Mains	$ 22,924,719	A	Source of Supply	$ 22,924,719	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 22,924,719	$ -
Infiltratn Galleries & Tunne	$ 4,785,160	A	Source of Supply	$ 4,785,160	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,785,160	$ -
Other P/E-Supply	$ 612,287	A	Source of Supply	$ 612,287	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 612,287	$ -
Water Pumping															
Land & Land Rights-Pumping	$ 1,205,373	B	Pumping	$ -	$ 1,205,373	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,205,373	$ -
Struct & Imp-Pumping	$ 47,495,821	B	Pumping	$ -	$ 47,495,821	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 47,495,821	$ -
Boiler Plant Equip P	$ 149,758	B	Pumping	$ -	$ 149,758	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 149,758	$ -
Power Generation Equip	$ 33,632,540	B	Pumping	$ -	$ 33,632,540	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 33,632,540	$ -
Pump Eqp Electric	$ 86,883,623	B	Pumping	$ -	$ 86,883,623	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 86,883,623	$ -
Pump Eqp Diesel	$ 3,873,792	B	Pumping	$ -	$ 3,873,792	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,873,792	$ -
Pump Eqp Hydraulic	$ 12,972,479	B	Pumping	$ -	$ 12,972,479	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,972,479	$ -
Pump Eqp Other	$ 17,925,728	B	Pumping	$ -	$ 17,925,728	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 17,925,728	$ -
Water Treatment															
Land & Land Rights-Treatment	$ 6,924,277	C	Water Treatment	$ -	$ -	$ 6,924,277	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,924,277	$ -
Struct & Imp-Treatment	$ 227,596,353	C	Water Treatment	$ -	$ -	$ 227,596,353	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 227,596,353	$ -
Struct & Imp-Treatment-Handl	$ 3,344,102	C	Water Treatment	$ -	$ -	$ 3,344,102	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,344,102	$ -
Other P/E-Treatment	$ 649,668	C	Water Treatment	$ -	$ -	$ 649,668	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 649,668	$ -
Other P/E-WT Res Hand Equip	$ 1,637,608	C	Water Treatment	$ -	$ -	$ 1,637,608	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,637,608	$ -
WT Equip Non-Media	$ 400,847,110	C	Water Treatment	$ -	$ -	$ 400,847,110	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 400,847,110	$ -
WT Equip Filter Media	$ 13,902,555	C	Water Treatment	$ -	$ -	$ 13,902,555	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,902,555	$ -
Pumping Equipment WT	$ 165,621	C	Water Treatment	$ -	$ -	$ 165,621	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 165,621	$ -
T&D															
Land & Land Rights-T&D	$ 17,268,115	K	Mains	$ -	$ -	$ -	$ 8,553,161	$ 8,714,953	$ -	$ -	$ -	$ -	$ -	$ 17,268,115	$ -
Struct & Imp-T&D	$ 15,903,815	K	Mains	$ -	$ -	$ -	$ 7,877,403	$ 8,026,412	$ -	$ -	$ -	$ -	$ -	$ 15,903,815	$ -
TD Mains Not Classified	$ 645,530,908	K	Mains	$ -	$ -	$ -	$ 319,741,331	$ 325,789,577	$ -	$ -	$ -	$ -	$ -	$ 645,530,908	$ -
TD Mains 4in & Less	$ 76,348,793	E	Distribution	$ -	$ -	$ -	$ -	$ 76,348,793	$ -	$ -	$ -	$ -	$ -	$ 76,348,793	$ -
TD Mains 6in to 8in	$ 943,698,534	E	Distribution	$ -	$ -	$ -	$ -	$ 943,698,534	$ -	$ -	$ -	$ -	$ -	$ 943,698,534	$ -
TD Mains 10in to 16in	$ 547,266,620	D	Transmission	$ -	$ -	$ -	$ 547,266,620	$ -	$ -	$ -	$ -	$ -	$ -	$ 547,266,620	$ -
TD Mains 18in & Grtr	$ 260,488,121	D	Transmission	$ -	$ -	$ -	$ 260,488,121	$ -	$ -	$ -	$ -	$ -	$ -	$ 260,488,121	$ -
Fire Mains	$ 1,921,086	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,921,086	$ 1,921,086	$ -
Pumping Equipment TD	$ 21,105	K	Mains	$ -	$ -	$ -	$ 10,454	$ 10,651	$ -	$ -	$ -	$ -	$ -	$ 21,105	$ -
Other P/E-TD	$ 84,506	K	Mains	$ -	$ -	$ -	$ 41,857	$ 42,649	$ -	$ -	$ -	$ -	$ -	$ 84,506	$ -
Storage															
Below Ground Tanks	$ 3,782,546	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 3,782,546	$ -	$ -	$ -	$ -	$ 3,782,546	$ -
Clearwell	$ (19,067)	F	Storage	$ -	$ -	$ -	$ -	$ -	$ (19,067)	$ -	$ -	$ -	$ -	$ (19,067)	$ -
Dist Reservoirs & Standpipes	$ 27,155,499	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 27,155,499	$ -	$ -	$ -	$ -	$ 27,155,499	$ -
Elevated Tanks & Standpipes	$ 37,258,226	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 37,258,226	$ -	$ -	$ -	$ -	$ 37,258,226	$ -
Ground Level Tanks	$ 9,166,802	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 9,166,802	$ -	$ -	$ -	$ -	$ 9,166,802	$ -
Tank Original Painting	$ 77,643	F	Storage	$ -	$ -	$ -	$ -	$ -	$ 77,643	$ -	$ -	$ -	$ -	$ 77,643	$ -
Meters															
Meters	$ 183,251,162	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 183,251,162	$ -	$ -	$ -	$ 183,251,162	$ -
Meter Installations	$ 94,760,137	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 94,760,137	$ -	$ -	$ -	$ 94,760,137	$ -
Meter Vaults	$ 48,730,578	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ 48,730,578	$ -	$ -	$ -	$ 48,730,578	$ -
Services															
Services	$ 627,894,988	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 627,894,988	$ -	$ -	$ 627,894,988	$ -
Backflow Prevention Devices	$ 149,527	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 149,527	$ -	$ -	$ 149,527	$ -
Hydrants															
Hydrants	$ 188,632,771	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 188,632,771	$ 188,632,771	$ -
General Plant															
Comm Equip Non-Telephone	$ 3,345,112	3	Fixed O&M	$ 141,480	$ 428,653	$ 414,677	$ 369,964	$ 376,962	$ 666,876	$ 1,509	$ 117,679	$ 735,707	$ 91,604	$ 3,345,112	$ -
Comm Equip Not Classified	$ 37,621,877	3	Fixed O&M	$ 1,591,201	$ 4,820,988	$ 4,663,793	$ 4,160,920	$ 4,239,628	$ 7,500,234	$ 16,969	$ 1,323,515	$ 8,274,371	$ 1,030,257	$ 37,621,877	$ -
Comm Equip Telephone	$ (357,556)	3	Fixed O&M	$ (15,123)	$ (45,818)	$ (44,324)	$ (39,545)	$ (40,293)	$ (71,282)	$ (161)	$ (12,579)	$ (78,639)	$ (9,791)	$ (357,556)	$ -
Comp & Periph Equip	$ (4,301,673)	3	Fixed O&M	$ (181,937)	$ (551,230)	$ (533,257)	$ (475,758)	$ (484,758)	$ (857,574)	$ (1,940)	$ (151,330)	$ (946,089)	$ (117,799)	$ (4,301,673)	$ -
Comp Software Mainframe	$ (4,644,740)	3	Fixed O&M	$ (196,447)	$ (595,192)	$ (575,785)	$ (513,701)	$ (523,418)	$ (925,968)	$ (2,095)	$ (163,399)	$ (1,021,541)	$ (127,194)	$ (4,644,740)	$ -
Computer Software	$ 51,685,561	3	Fixed O&M	$ 2,186,018	$ 6,623,154	$ 6,407,197	$ 5,716,341	$ 5,824,472	$ 10,303,947	$ 23,313	$ 1,818,267	$ 11,367,469	$ 1,415,384	$ 51,685,561	$ -
Data Handling Equipment	$ (316,538)	3	Fixed O&M	$ (13,388)	$ (40,562)	$ (39,240)	$ (35,009)	$ (35,671)	$ (63,104)	$ (143)	$ (11,136)	$ (69,618)	$ (8,668)	$ (316,538)	$ -
Laboratory Equipment	$ 464,642	C	Water Treatment	$ -	$ -	$ 464,642	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 464,642	$ -
Land & Land Rights-General	$ 266,051	3	Fixed O&M	$ 11,253	$ 34,093	$ 32,981	$ 29,425	$ 29,981	$ 53,040	$ 120	$ 9,360	$ 58,514	$ 7,286	$ 266,051	$ -

New Jersey-American Water Company
2022 Cost of Service Study - Account Detail

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Misc Equipment	$ 18,727,390	3	Fixed O&M	$ 792,067	$ 2,399,788	$ 2,321,539	$ 2,071,220	$ 2,110,399	$ 3,733,461	$ 8,447	$ 658,818	$ 4,118,811	$ 512,840	$ 18,727,390	$ -
Office Furniture & Equip	$ 5,908,423	3	Fixed O&M	$ 249,894	$ 757,124	$ 732,437	$ 653,462	$ 665,823	$ 1,177,893	$ 2,665	$ 207,855	$ 1,299,470	$ 161,799	$ 5,908,423	$ -
Other Office Equipment	$ (419,735)	3	Fixed O&M	$ (17,753)	$ (53,786)	$ (52,032)	$ (46,422)	$ (47,300)	$ (83,678)	$ (189)	$ (14,766)	$ (92,314)	$ (11,494)	$ (419,735)	$ -
Other P/E-CPS	$ 1,126,203	3	Fixed O&M	$ 47,632	$ 144,315	$ 139,610	$ 124,556	$ 126,912	$ 224,518	$ 508	$ 39,619	$ 247,692	$ 30,841	$ 1,126,203	$ -
Other Tangible Property	$ 965,204	3	Fixed O&M	$ 40,823	$ 123,684	$ 119,651	$ 106,750	$ 108,769	$ 192,421	$ 435	$ 33,955	$ 212,282	$ 26,432	$ 965,204	$ -
Power Operated Equipment	$ 4,250,874	3	Fixed O&M	$ 179,789	$ 544,721	$ 526,959	$ 470,140	$ 479,033	$ 847,447	$ 1,917	$ 149,543	$ 934,916	$ 116,408	$ 4,250,874	$ -
Remote Control & Instrument	$ 22,422,506	3	Fixed O&M	$ 948,350	$ 2,873,292	$ 2,779,604	$ 2,479,894	$ 2,526,804	$ 4,470,113	$ 10,114	$ 788,810	$ 4,931,496	$ 614,029	$ 22,422,506	$ -
Stores Equipment	$ 637,725	3	Fixed O&M	$ 26,972	$ 81,720	$ 79,056	$ 70,531	$ 71,866	$ 127,136	$ 288	$ 22,435	$ 140,258	$ 17,464	$ 637,725	$ -
Struct & Imp-Cap Lease	$ 7,304	3	Fixed O&M	$ 309	$ 936	$ 905	$ 808	$ 823	$ 1,456	$ 3	$ 257	$ 1,606	$ 200	$ 7,304	$ -
Struct & Imp-General	$ 81,864,414	3	Fixed O&M	$ 3,462,419	$ 10,490,369	$ 10,148,316	$ 9,054,075	$ 9,225,342	$ 16,320,353	$ 36,925	$ 2,879,940	$ 18,004,859	$ 2,241,817	$ 81,864,414	$ -
Struct & Imp-HVAC	$ 2,636,848	3	Fixed O&M	$ 111,524	$ 337,894	$ 326,877	$ 291,631	$ 297,148	$ 525,678	$ 1,189	$ 92,763	$ 579,936	$ 72,209	$ 2,636,848	$ -
Struct & Imp-Misc	$ (103,463)	3	Fixed O&M	$ (4,376)	$ (13,258)	$ (12,826)	$ (11,443)	$ (11,659)	$ (20,626)	$ (47)	$ (3,640)	$ (22,755)	$ (2,833)	$ (103,463)	$ -
Struct & Imp-Offices	$ 17,853,925	3	Fixed O&M	$ 755,124	$ 2,287,859	$ 2,213,260	$ 1,974,616	$ 2,011,968	$ 3,559,329	$ 8,053	$ 628,090	$ 3,926,705	$ 488,921	$ 17,853,925	$ -
Struct & Imp-Store,Shop,Gar	$ 5,018,225	3	Fixed O&M	$ 212,244	$ 643,052	$ 622,084	$ 555,008	$ 565,506	$ 1,000,425	$ 2,263	$ 176,538	$ 1,103,684	$ 137,422	$ 5,018,225	$ -
Tools,Shop,Garage Equip	$ 13,014,417	3	Fixed O&M	$ 550,439	$ 1,667,709	$ 1,613,331	$ 1,439,374	$ 1,466,601	$ 2,594,532	$ 5,870	$ 457,839	$ 2,862,327	$ 356,393	$ 13,014,417	$ -
Trans Equip Autos	$ 188,785	3	Fixed O&M	$ 7,985	$ 24,192	$ 23,403	$ 20,879	$ 21,274	$ 37,636	$ 85	$ 6,641	$ 41,520	$ 5,170	$ 188,785	$ -
Trans Equip Hvy Duty Trks	$ 13,215,033	3	Fixed O&M	$ 558,924	$ 1,693,417	$ 1,638,201	$ 1,461,562	$ 1,489,209	$ 2,634,527	$ 5,961	$ 464,897	$ 2,906,450	$ 361,887	$ 13,215,033	$ -
Trans Equip Lt Duty Trks	$ 21,534,163	3	Fixed O&M	$ 910,778	$ 2,759,457	$ 2,669,481	$ 2,381,644	$ 2,426,696	$ 4,293,015	$ 9,713	$ 757,559	$ 4,736,118	$ 589,703	$ 21,534,163	$ -
Trans Equip Not Classified	$ (48,968)	3	Fixed O&M	$ (2,071)	$ (6,275)	$ (6,070)	$ (5,416)	$ (5,518)	$ (9,762)	$ (22)	$ (1,723)	$ (10,770)	$ (1,341)	$ (48,968)	$ -
Trans Equip Other	$ 5,487,680	3	Fixed O&M	$ 232,099	$ 703,209	$ 680,280	$ 606,929	$ 618,409	$ 1,094,015	$ 2,475	$ 193,053	$ 1,206,934	$ 150,277	$ 5,487,680	$ -
Net Utility Plant	$ 5,101,673,937			$ 224,275,816	$ 242,439,425	$ 692,898,784	$ 1,177,701,686	$ 1,397,127,858	$ 136,841,859	$ 327,101,159	$ 638,953,000	$ 65,494,462	$ 198,839,888	$ 5,101,673,937	$ -
Additions to Rate Base															
Cash Working Capital	$ 89,700,000	3	Fixed O&M	$ 3,793,822	$ 11,494,446	$ 11,119,654	$ 9,920,678	$ 10,108,338	$ 17,882,442	$ 40,459	$ 3,155,591	$ 19,728,179	$ 2,456,391	$ 89,700,000	$ -
Utility Plant Acquisition Adjustment	$ 1,800,240	5	Net Plant (less gen. and int.)	$ 79,141	$ 85,550	$ 244,505	$ 415,578	$ 493,008	$ 48,288	$ 115,425	$ 225,469	$ 23,111	$ 70,165	$ 1,800,240	$ -
Prepayments	$ 2,933,888	5	Net Plant (less gen. and int.)	$ 128,977	$ 139,423	$ 398,475	$ 677,277	$ 803,465	$ 78,695	$ 188,110	$ 367,451	$ 37,665	$ 114,350	$ 2,933,888	$ -
Materials & Supplies	$ 13,020,230	5	Net Plant (less gen. and int.)	$ 572,385	$ 618,741	$ 1,768,381	$ 3,005,670	$ 3,565,678	$ 349,241	$ 834,811	$ 1,630,703	$ 167,152	$ 507,469	$ 13,020,230	$ -
Total Additions	$ 107,454,358			$ 4,574,325	$ 12,338,160	$ 13,531,014	$ 14,019,203	$ 14,970,489	$ 18,358,666	$ 1,178,805	$ 5,379,214	$ 19,956,107	$ 3,148,375	$ 107,454,358	$ -
Reductions to Rate Base															
Refund of COR Balance	$ (31,100,000)	5	Net Plant (less gen. and int.)	$ (1,367,194)	$ (1,477,920)	$ (4,223,938)	$ (7,179,315)	$ (8,516,945)	$ (834,193)	$ (1,994,021)	$ (3,895,082)	$ (399,257)	$ (1,212,136)	$ (31,100,000)	$ -
Vehicle depreciation capitalize portion	$ 646,000	5	Net Plant (less gen. and int.)	$ 28,399	$ 30,699	$ 87,738	$ 149,127	$ 176,911	$ 17,328	$ 41,419	$ 80,907	$ 8,293	$ 25,178	$ 646,000	$ -
Customer Advances for Construction															
Advances for Construction - Non Taxable Mains	$ (831,745)	K	Mains	$ -	$ -	$ -	$ (411,976)	$ (419,769)	$ -	$ -	$ -	$ -	$ -	$ (831,745)	$ -
Advances for Construction - Non Taxable Ext Deposits	$ (24,120,591)	K	Mains	$ -	$ -	$ -	$ (11,947,298)	$ (12,173,293)	$ -	$ -	$ -	$ -	$ -	$ (24,120,591)	$ -
Advances for Construction - Non Taxable Hydrants	$ -	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Advances for Construction - Non Taxable Other	$ -	K	Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Advances for Construction - Taxable Mains	$ (23,288,846)	K	Mains	$ -	$ -	$ -	$ (11,535,322)	$ (11,753,525)	$ -	$ -	$ -	$ -	$ -	$ (23,288,846)	$ -
Advances for Construction - Taxable Ext Deposits	$ (3,326,978)	K	Mains	$ -	$ -	$ -	$ (1,647,903)	$ (1,679,075)	$ -	$ -	$ -	$ -	$ -	$ (3,326,978)	$ -
Advances for Construction - Taxable Services	$ (2,495,234)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (2,495,234)	$ -	$ -	$ (2,495,234)	$ -
Advances for Construction - Taxable Meters	$ (831,745)	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ (831,745)	$ -	$ -	$ -	$ (831,745)	$ -
Advances for Construction - Taxable Hydrants	$ (831,745)	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (831,745)	$ (831,745)	$ -
Advances for Construction - Taxable Mains FIT	$ (23,288,846)	K	Mains	$ -	$ -	$ -	$ (11,535,322)	$ (11,753,525)	$ -	$ -	$ -	$ -	$ -	$ (23,288,846)	$ -
Advances for Construction - Taxable Services FIT	$ (2,495,234)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (2,495,234)	$ -	$ -	$ (2,495,234)	$ -
Advances for Construction - Taxable Meters FIT	$ (831,745)	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ (831,745)	$ -	$ -	$ -	$ (831,745)	$ -
Advances for Construction - Taxable Hydrants FIT	$ (831,745)	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (831,745)	$ (831,745)	$ -
CIAC															
CIAC-Non Taxable - Mains	$ (106,608,184)	K	Mains	$ -	$ -	$ -	$ (52,804,664)	$ (53,803,520)	$ -	$ -	$ -	$ -	$ -	$ (106,608,184)	$ -
CIAC-Non Taxable - Ext Dep	$ (58,595,307)	K	Mains	$ -	$ -	$ -	$ (29,023,152)	$ (29,572,155)	$ -	$ -	$ -	$ -	$ -	$ (58,595,307)	$ -
CIAC-Non Taxable - Services	$ (979,855)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (979,855)	$ -	$ -	$ (979,855)	$ -
CIAC-Non Taxable - Meters	$ (1,175,826)	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ (1,175,826)	$ -	$ -	$ -	$ (1,175,826)	$ -
CIAC-Non Taxable - Hydrants	$ (979,855)	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (979,855)	$ (979,855)	$ -
CIAC-Non Taxable - Other	$ (13,521,994)	K	Mains	$ -	$ -	$ -	$ (6,697,650)	$ (6,824,344)	$ -	$ -	$ -	$ -	$ -	$ (13,521,994)	$ -
CIAC-Taxable - Mains	$ (4,311,360)	K	Mains	$ -	$ -	$ -	$ (2,135,483)	$ (2,175,878)	$ -	$ -	$ -	$ -	$ -	$ (4,311,360)	$ -
CIAC-Taxable - Ext Dep	$ (1,959,709)	K	Mains	$ -	$ -	$ -	$ (970,674)	$ (989,035)	$ -	$ -	$ -	$ -	$ -	$ (1,959,709)	$ -
CIAC-Taxable - Services	$ (5,095,244)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (5,095,244)	$ -	$ -	$ (5,095,244)	$ -
CIAC-Taxable - Meters	$ -	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CIAC-Taxable - Hydrants	$ (195,971)	J	Hydrants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (195,971)	$ (195,971)	$ -
CIAC-Taxable - Other	$ (1,763,738)	K	Mains	$ -	$ -	$ -	$ (873,607)	$ (890,132)	$ -	$ -	$ -	$ -	$ -	$ (1,763,738)	$ -
CIAC-Taxable - Mains FIT	$ (587,913)	K	Mains	$ -	$ -	$ -	$ (291,202)	$ (296,711)	$ -	$ -	$ -	$ -	$ -	$ (587,913)	$ -
CIAC-Taxable - Services FIT	$ (195,971)	H	Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (195,971)	$ -	$ -	$ (195,971)	$ -
CIAC-Taxable - Meters FIT	$ -	G	Meters	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
MTBE Settlement	$ (4,141,733)	B	Pumping	$ -	$ (4,141,733)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (4,141,733)	$ -
Pre-1971 I.T.C.	$ (217,969)	5	Net Plant (less gen. and int.)	$ (9,582)	$ (10,358)	$ (29,604)	$ (50,317)	$ (59,692)	$ (5,847)	$ (13,975)	$ (27,299)	$ (2,798)	$ (8,495)	$ (217,969)	$ -
Consolidated FIT	$ (20,312,669)	5	Net Plant (less gen. and int.)	$ (892,970)	$ (965,289)	$ (2,758,825)	$ (4,689,101)	$ (5,562,761)	$ (544,845)	$ (1,302,376)	$ (2,544,036)	$ (260,771)	$ (791,695)	$ (20,312,669)	$ -
Deferred Federal Income Tax	$ (554,155,677)	5	Net Plant (less gen. and int.)	$ (24,361,360)	$ (26,334,334)	$ (75,264,276)	$ (127,924,694)	$ (151,759,274)	$ (14,864,081)	$ (35,530,488)	$ (69,404,560)	$ (7,114,161)	$ (21,598,451)	$ (554,155,677)	$ -
Excess ADIT-TCJA Liability	$ (252,440,892)	5	Net Plant (less gen. and int.)	$ (11,097,610)	$ (11,996,381)	$ (34,285,999)	$ (58,275,003)	$ (69,132,643)	$ (6,771,205)	$ (16,185,611)	$ (31,616,655)	$ (3,240,795)	$ (9,838,990)	$ (252,440,892)	$ -
Total Reductions	$ (1,140,868,318)			$ (37,700,317)	$ (44,895,316)	$ (116,474,903)	$ (327,843,555)	$ (367,185,365)	$ (23,002,843)	$ (57,824,367)	$ (118,668,261)	$ (11,009,488)	$ (36,263,903)	$ (1,140,868,318)	$ -
TOTAL RATE BASE (Water)	**$ 4,068,259,977**			**$ 191,149,824**	**$ 209,882,270**	**$ 589,954,895**	**$ 863,877,335**	**$ 1,044,912,982**	**$ 132,197,681**	**$ 270,455,598**	**$ 525,663,953**	**$ 74,441,080**	**$ 165,724,360**	**$ 4,068,259,977**	**$ -**
TOTAL RATE BASE (Sewer)	**$ 199,145,730**														
TOTAL NJ RATE BASE	**$ 4,267,405,707**														
Miscellaneous T&D Operating Expense	$ 2,470,259	1		$ -	$ -	$ -	$ 1,221,144	$ 1,244,243	$ 4,873	$ -	$ -	$ -	$ -	$ 2,470,259	
				-	-	-	0.49434	0.50369	0.00197	-	-	-	-	1.00000	
Miscellaneous T&D Maintenance Expense	$ 12,916,723	2		$ -	$ -	$ -	$ 1,871,221	$ 1,906,617	$ 6,941,429	$ 15,729	$ 1,226,774	$ -	$ 954,952	$ 12,916,723	
				-	-	-	0.14487	0.14761	0.53740	0.00122	0.09498	-	0.07393	1.00000	
Fixed O&M	$ 63,757,072	3		$ 2,696,577	$ 8,170,036	$ 7,903,640	$ 7,051,431	$ 7,184,817	$ 12,710,503	$ 28,757	$ 2,242,935	$ 14,022,418	$ 1,745,956	$ 63,757,072	
				0.04229	0.12814	0.12396	0.11060	0.11269	0.19936	0.00045	0.03518	0.21994	0.02738	1.00000	

New Jersey-American Water Company
2022 Cost of Service Study - Account Detail

	Post Test Year	Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Variance
Labor	$ 21,486,522	4		$ 651,548	$ 5,903,083	$ 3,101,949	$ 2,300,362	$ 2,343,876	$ 1,469,850	$ 4,439	$ 1,260,054	$ 3,416,302	$ 1,035,060	$ 21,486,522	
				0.03032	0.27473	0.14437	0.10706	0.10909	0.06841	0.00021	0.05864	0.15900	0.04817	1.00000	
Net Plant	$ 5,098,163,789	5		$ 224,121,506	$ 242,272,618	$ 692,422,043	$ 1,176,891,382	$ 1,396,166,580	$ 136,747,706	$ 326,876,101	$ 638,513,375	$ 65,449,399	$ 198,703,079	$ 5,098,163,789	
				0.04396	0.04752	0.13582	0.23085	0.27386	0.02682	0.06412	0.12524	0.01284	0.03898	1.00000	
Rate Base	$ 4,068,259,977	6		$ 191,149,824	$ 209,882,270	$ 589,954,895	$ 863,877,335	$ 1,044,912,982	$ 132,197,681	$ 270,455,598	$ 525,663,953	$ 74,441,080	$ 165,724,360	$ 4,068,259,977	
				0.04699	0.05159	0.14501	0.21235	0.25685	0.03249	0.06648	0.12921	0.01830	0.04074	1.00000	
Variable Cost	$ 42,982,306			$ 10,876,598	$ 5,557,919	$ 24,082,403	$ 1,221,144	$ 1,244,243	$ -	$ -	$ -	$ -	$ -	$ 42,982,306	

New Jersey-American Water Company
2022 Cost of Service Study - Usage Statistics

	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total	
Total Usage	61,193,398	642,259	3,985,616	6,931,044	9,528,122	95,380	-	82,375,818	thousand gallons
Average Day Usage	167,653	1,760	10,919	18,989	26,104	261	-	225,687	thousand gallons
Max Day Capacity Factor	1.62	1.00	1.33	1.00	1.15	---	---	---	
Max Day Usage	271,598	1,760	14,523	18,989	30,020	5,191	18,809	360,890	thousand gallons
Extra Capacity	103,945	-	3,603	-	3,916	4,930	18,809	135,203	thousand gallons
Fire Allocator	-	-	-	-	-	0.2163	0.7837	1.0000	40,000 gpm for 10 hours
Distribution Multiplier	1.00	0.25	0.08	0.08	-	1.00	1.00	N/A	
Average Hourly Usage	6,986	18	36	63	-	11	-	7,114	thousand gallons
Max Hour Capacity Factor	3.15	1.00	2.12	1.00	1.15	---	---	---	
Max Hour Usage	22,004	18	77	63	-	519	1,881	24,563	thousand gallons
Extra Capacity	15,019	-	41	-	-	508	1,881	17,449	thousand gallons
Customers	650,270	6	6	28	5	12,187	306	662,808	
Hydrants	-	-	-	-	-	2,344	46,599	48,943	
Revenue	$ 653,258,655	$ 1,568,492	$ 16,038,637	$ 19,524,406	$ 27,737,073	$ 26,815,521	$ 30,824,066	$ 775,766,850	

	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Meter Weighting	Service Weighting
5/8-METER	568,792	1	13	-	-	-	-	1.0	1.0
3/4-METER	18,005	-	4	-	-	-	-	1.5	1.0
1-METER	45,252	2	8	-	-	-	-	2.5	1.7
1.5-METER	4,403	-	13	-	-	-	-	5.0	3.3
2-METER	12,536	2	71	1	-	549	-	8.0	5.3
3-METER	916	1	44	2	-	121	-	15.0	10.0
4-METER	856	3	52	15	-	2,674	-	25.0	16.7
6-METER	201	5	32	11	-	4,567	-	50.0	33.3
8-METER	82	2	11	2	-	1,608	-	80.0	53.3
10-METER	30	-	9	1	-	140	-	100.0	66.7
12-METER	3	-	2	1	-	51	-	125.0	83.3
16-METER	-	-	-	-	-	2	-	200.0	133.3

System Load Factor:	0.6993	322,733	max day - thousand gallons per day	13,447.19	Average system hourly flow on max day
System Load Factor (fire):	0.6514	346,471	max day with fire - thousand gallons per day	14,436.31	Average system hourly flow on max day
System Load Factor (Hourly)	0.3984	17,857	max hour - thousand gallons per day		
System Load Factor (Hourly fire)	0.3604	19,738	max hour with fire - thousand gallons per day		

Mains Statistics

Type	Feet	Pct
10-Inch and Larger	13,987,261	0.2851
Under 10-inch	35,067,517	0.7149
Total	49,054,778	1.0000

Storage Statistics

Total Capacity	207,000	Distribution Tanks
Fire Allocation	0.1147	percentage of storage needed for maximum fire protection day
Non-Fire Allocation	0.8853	

New Jersey-American Water Company
2022 Cost of Service Study - Class Allocators

1. VARIABLE COST

Item	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total	Units
Total Usage	167,653	1,760	10,919	18,989	26,104	261	-	225,687	Thousand Gallons
Allocator	**0.7429**	**0.0078**	**0.0484**	**0.0841**	**0.1157**	**0.0012**	**-**	**1.0000**	
Allocator - No Manasquan	**0.7487**	**-**	**0.0488**	**0.0848**	**0.1166**	**0.0012**	**-**	**1.0000**	

2. BASE/EXTRA DAILY

Item	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total	Units
Average Daily Use	167,653	1,760	10,919	18,989	26,104	261	-	225,687	Thousand Gallons
Extra Capacity	103,945	-	3,603	-	3,916			111,464	Thousand Gallons
System Capacity Factor	0.6993								
Average Day Allocator	0.5195	0.0055	0.0338	0.0588	0.0809	0.0008	-	0.6993	
Extra Capacity Allocator	0.2804	-	0.0097	-	0.0106	-	-	0.3007	
Allocator	**0.7999**	**0.0055**	**0.0436**	**0.0588**	**0.0914**	**0.0008**	**-**	**1.0000**	
Allocator - No Manasquan	**0.8043**	**-**	**0.0438**	**0.0592**	**0.0920**	**0.0008**	**-**	**1.0000**	

4. BASE/EXTRA DAILY (w FIRE PROTECTION)

Item	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total	Units
Average Daily Use	167,653	1,760	10,919	18,989	26,104	261	-	225,687	Thousand Gallons
Extra Capacity	103,945	-	3,603	-	3,916	4,930	18,809	135,203	Thousand Gallons
System Capacity Factor	0.6514	assuming fire protection							
Average Day Allocator	0.4839	0.0051	0.0315	0.0548	0.0753	0.0008	-	0.6514	
Extra Capacity Allocator	0.2680	-	0.0093	-	0.0101	0.0127	0.0485	0.3486	
Combined Allocator	**0.7519**	**0.0051**	**0.0408**	**0.0548**	**0.0854**	**0.0135**	**0.0485**	**1.0000**	

5. BASE/EXTRA HOURLY (w FIRE PROTECTION)

Item	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total	Units
Average Hourly Use	6,986	18	36	63	-	11	-	7,114	Thousand Gallons
Extra Capacity	15,019	-	41	-	-	508	1,881	17,449	Thousand Gallons
System Capacity Factor	0.3604	assuming fire protection							
Average Day Allocator	0.3539	0.0009	0.0018	0.0032	-	0.0006	-	0.3604	
Extra Capacity Allocator	0.5505	-	0.0015	-	-	0.0186	0.0689	0.6396	
Combined Allocator	**0.9044**	**0.0009**	**0.0033**	**0.0032**	**-**	**0.0192**	**0.0689**	**1.0000**	

New Jersey-American Water Company
2022 Cost of Service Study - Class Allocators

6. STORAGE

Item	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total	Units
Average Hourly Use	6,986	-	455	791	1,088	11	-	9,330	
Extra Capacity	15,019	-	510	-	163	-----	-----	15,692	
Fire Allocator	-	-	-	-	-	0.21630	0.78370	1.00000	
System Capacity Factor	0.3604	assuming fire protection							
Average Day Allocator	0.2699	-	0.0176	0.0306	0.0420	0.0004	-	0.3604	
Extra Capacity Allocator	0.6121	-	0.0208	-	0.0066	-	-	0.6396	
Allocator	0.8820	-	0.0383	0.0306	0.0487	0.0004	-	1.0000	
Non-Fire Allocation of Storage	0.88532								
Fire Allocaton of Storage	0.11468								
Non-Fire Allocator	0.7809	-	0.0339	0.0271	0.0431	0.0004	-	0.8853	
Fire Allocator	-	-	-	-	-	0.0248	0.0899	0.1147	
Combined Allocator	**0.7809**	**-**	**0.0339**	**0.0271**	**0.0431**	**0.0252**	**0.0899**	**1.0000**	

7. WATER MONITORING TAXES

Item	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total	Units
Combined Allocator	**0.9389**	**-**	**0.0611**	**-**	**-**	**-**	**-**	**1.0000**	

8. MAINS

Item	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total	Units
Factor 4	0.7519	0.0051	0.0408	0.0548	0.0854	0.0135	0.0485	1.0000	Thousand Gallons
Factor 5	0.9044	0.0009	0.0033	0.0032	-	0.0192	0.0689	1.0000	Thousand Gallons
Tranmission Weighting	0.2851	3,728	Average system hourly load						
Distribution Weighting	0.7149	1,636	Average system hourly load - max day with fire protection (incremental)						
Combined Allocator	**0.8609**	**0.0021**	**0.0140**	**0.0179**	**0.0244**	**0.0176**	**0.0631**	**1.0000**	

9. HYDRANTS

Item	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total
Total Hydrants	-	-	-	-	-	2,344	46,599	48,943
Allocator	**-**	**-**	**-**	**-**	**-**	**0.04789**	**0.95211**	**1.00000**

New Jersey-American Water Company
2022 Cost of Service Study - Class Allocators

10. METERS

Item	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total	Weighting
5/8-METER	568,792	1	13	-	-	-		568,806	1.0
3/4-METER	18,005	-	4	-	-	-		18,009	1.5
1-METER	45,252	2	8	-	-	-		45,262	2.5
1.5-METER	4,403	-	13	-	-	-		4,416	5.0
2-METER	12,536	2	71	1	-	-		12,610	8.0
3-METER	916	1	44	2	-	-		963	15.0
4-METER	856	3	52	15	-	-		926	25.0
6-METER	201	5	32	11	-	-		249	50.0
8-METER	82	2	11	2	-	-		97	80.0
10-METER	30	-	9	1	-	-		40	100.0
12-METER	3	-	2	1	-	-		6	125.0
16-METER	-	-	-	-	-	-		-	200.0
Total	886,358	522	6,262	1,348	-	-	-	894,490	-----
Allocator	**0.99091**	**0.00058**	**0.00700**	**0.00151**	**-**	**-**	**-**	**1.00000**	

11. SERVICES

Item	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total	Weighting
5/8-METER	568,792	1	13	-	-	-		568,806	1.0
3/4-METER	18,005	-	4	-	-	-		18,009	1.0
1-METER	45,252	2	8	-	-	-		45,262	1.7
1.5-METER	4,403	-	13	-	-	-		4,416	3.3
2-METER	12,536	2	71	1	-	549		13,159	5.3
3-METER	916	1	44	2	-	121		1,084	10.0
4-METER	856	3	52	15	-	2,674		3,600	16.7
6-METER	201	5	32	11	-	4,567		4,816	33.3
8-METER	82	2	11	2	-	1,608		1,705	53.3
10-METER	30	-	9	1	-	140		180	66.7
12-METER	3	-	2	1	-	51		57	83.3
16-METER	-	-	-	-	-	2		2	133.3
Total	781,466	348	4,177	899	-	300,416	-	1,087,306	-----
Allocator	**0.71872**	**0.00032**	**0.00384**	**0.00083**	**-**	**0.27629**	**-**	**1.00000**	

12. CUSTOMERS

Item	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total
Total Customers	650,270	6	6	28	5	12,187	306	662,808
Allocator	**0.98108**	**0.00001**	**0.00001**	**0.00004**	**0.00001**	**0.01839**	**0.00046**	**1.00000**

13. METERED CUSTOMERS

Item	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total
Total Customers	650,270	6	6	28	5	12,187	-	662,502
Allocator	**0.98154**	**0.00001**	**0.00001**	**0.00004**	**0.00001**	**0.01840**	**-**	**1.00000**

New-Jersey American Water
2022 Cost of Service Study - Allocator Summary

Alloc	Description	Source of Supply	Pumping	Water Treatment	Transmission	Distribution	Storage	Meters	Services	Customers	Hydrants	Total	Notes
A	Source of Supply	1.00000	-	-	-	-	-	-	-	-	-	1.00000	
B	Pumping	-	1.00000	-	-	-	-	-	-	-	-	1.00000	
C	Water Treatment	-	-	1.00000	-	-	-	-	-	-	-	1.00000	
D	Transmission	-	-	-	1.00000	-	-	-	-	-	-	1.00000	
E	Distribution	-	-	-	-	1.00000	-	-	-	-	-	1.00000	
F	Storage	-	-	-	-	-	1.00000	-	-	-	-	1.00000	
G	Meters	-	-	-	-	-	-	1.00000	-	-	-	1.00000	
H	Services	-	-	-	-	-	-	-	1.00000	-	-	1.00000	
I	Customers	-	-	-	-	-	-	-	-	1.00000	-	1.00000	
J	Hydrants	-	-	-	-	-	-	-	-	-	1.00000	1.00000	
K	Mains	-	-	-	0.49532	0.50468	-	-	-	-	-	1.00000	
1	T/D Oper. Expense	-	-	-	0.49434	0.50369	0.00197	-	-	-	-	1.00000	
2	T/D Maint.. Expense	-	-	-	0.14487	0.14761	0.53740	0.00122	0.09498	-	0.07393	1.00000	
3	Fixed O&M	0.04229	0.12814	0.12396	0.11060	0.11269	0.19936	0.00045	0.03518	0.21994	0.02738	1.00000	
4	Labor	0.03032	0.27473	0.14437	0.10706	0.10909	0.06841	0.00021	0.05864	0.15900	0.04817	1.00000	
5	Net Plant (less gen. and int.)	0.04396	0.04752	0.13582	0.23085	0.27386	0.02682	0.06412	0.12524	0.01284	0.03898	1.00000	
6	Rate Base	0.04699	0.05159	0.14501	0.21235	0.25685	0.03249	0.06648	0.12921	0.01830	0.04074	1.00000	
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Alloc	Description	General	Manasquan Resale	Optional Ind. Whole.	Resale CD	Resale SOS	Private Fire	Public Fire	Total	Notes
1	Total Usage	0.74286	0.00780	0.04838	0.08414	0.11567	0.00116	-	1.00000	
1A	Total Usage w/o Manasquan	0.74869	-	0.04876	0.08480	0.11658	0.00117	-	1.00000	
2	Base/Extra Daily	0.79989	0.00545	0.04356	0.05884	0.09145	0.00081	-	1.00000	
2A	Base/Extra Daily w/o Manasquan	0.80428	-	0.04379	0.05916	0.09195	0.00081	-	1.00000	
3	---	-	-	-	-	-	-	-	-	
4	Base/Extra Daily w/ Fire	0.75190	0.00508	0.04081	0.05481	0.08544	0.01347	0.04850	1.00000	
5	Base/Extra Hourly w/ Fire	0.90441	0.00093	0.00334	0.00321	-	0.01918	0.06894	1.00000	
6	Storage	0.78085	-	0.03395	0.02706	0.04309	0.02518	0.08987	1.00000	
7	Meters	0.99091	0.00058	0.00700	0.00151	-	-	-	1.00000	
8	Services	0.71872	0.00032	0.00384	0.00083	-	0.27629	-	1.00000	
9	Customers	0.98108	0.00001	0.00001	0.00004	0.00001	0.01839	0.00046	1.00000	
10	Hydrants	-	-	-	-	-	0.04789	0.95211	1.00000	
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2022 New Jersey Rate Case
Residential Declining Use Model
REGRESSION MODEL

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9838
R Square	0.9679
Adjusted R Square	0.9632
Standard Error	0.2702
Observations	120

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	15	228.72	15.2483	208.8786	0.0000
Residual	104	7.59	0.0730		
Total	119	236.32			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4.5529	0.1065	42.7613	0.0000	4.3417	4.7640	4.3812	4.8161
Jan	0.1946	0.1208	1.6107	0.1103	-0.0450	0.4342	-0.0904	0.4442
Feb	-0.3165	0.1208	-2.6192	0.0101	-0.5562	-0.0769	-0.5977	-0.0631
Mar	-0.3290	0.1209	-2.7224	0.0076	-0.5687	-0.0894	-0.5800	-0.0454
Apr	-0.1061	0.1211	-0.8765	0.3828	-0.3462	0.1339	-0.4491	0.0880
May	0.3436	0.1212	2.8336	0.0055	0.1031	0.5840	0.0664	0.6039
Jun	1.8613	0.1213	15.3507	0.0000	1.6209	2.1018	1.5893	2.1274
Jul	3.4191	0.1212	28.2023	0.0000	3.1787	3.6595	3.0936	3.6314
Aug	3.2202	0.1215	26.4978	0.0000	2.9792	3.4612	3.0495	3.5871
Sep	2.7795	0.1214	22.8993	0.0000	2.5388	3.0202	2.6027	3.1405
Oct	1.5228	0.1209	12.5953	0.0000	1.2831	1.7626	1.1906	1.7252
Nov	0.3010	0.1209	2.4901	0.0144	0.0613	0.5406	-0.0387	0.4958
Trend	-0.0059	0.0009	-6.3931	0.0000	-0.0077	-0.0040	-0.0084	-0.0050
Rain	-0.3106	0.0287	-10.8206	0.0000	-0.3675	-0.2537	-0.2999	-0.1944
CDD	0.0078	0.0011	7.0594	0.0000	0.0056	0.0100	0.0050	0.0095
COVID	0.4588	0.0889	5.1629	0.0000	0.2826	0.6350	0.2478	0.8078

2022 New Jersey Rate Case
Commercial Declining Use Model
REGRESSION MODEL

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9635
R Square	0.9284
Adjusted R Square	0.9181
Standard Error	1.6658
Observations	120

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	15	3741.81	249.4537	89.8934	0.0000
Residual	104	288.60	2.7750		
Total	119	4030.40			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	29.5025	0.6562	44.9600	0.0000	28.2013	30.8038	4.3812	4.8161
Jan	0.0321	0.7450	0.0431	0.9657	-1.4453	1.5095	-0.0904	0.4442
Feb	-1.4775	0.7451	-1.9831	0.0500	-2.9550	0.0000	-0.5977	-0.0631
Mar	-1.0181	0.7452	-1.3663	0.1748	-2.4958	0.4596	-0.5800	-0.0454
Apr	0.2023	0.7463	0.2711	0.7868	-1.2777	1.6824	-0.4491	0.0880
May	0.6228	0.7473	0.8334	0.4065	-0.8591	2.1047	0.0664	0.6039
Jun	6.0363	0.7477	8.0732	0.0000	4.5536	7.5190	1.5893	2.1274
Jul	12.3933	0.7476	16.5764	0.0000	10.9107	13.8759	3.0936	3.6314
Aug	13.4459	0.7488	17.9554	0.0000	11.9609	14.9309	3.0495	3.5871
Sep	11.9563	0.7491	15.9615	0.0000	10.4708	13.4417	2.6027	3.1405
Oct	8.1092	0.7456	10.8766	0.0000	6.6307	9.5877	1.1906	1.7252
Nov	0.7528	0.7453	1.0101	0.3148	-0.7251	2.2308	-0.0387	0.4958
Trend	-0.0123	0.0057	-2.1732	0.0320	-0.0235	-0.0011	-0.0084	-0.0050
Rain	-0.9455	0.1888	-5.0070	0.0000	-1.3199	-0.5710	-0.2999	-0.1944
CDD	0.0294	0.0060	4.9086	0.0000	0.0175	0.0413	0.0050	0.0095
COVID	-2.4164	0.5476	-4.4127	0.0000	-3.5023	-1.3305	0.2478	0.8078

2022 New Jersey Rate Case
Public Authorities Declining Use Model
REGRESSION MODEL

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9421
R Square	0.8875
Adjusted R Square	0.8713
Standard Error	2.6050
Observations	120

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	15	5568.87	371.2581	54.7086	0.0000
Residual	104	705.75	6.7861		
Total	119	6274.62			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	29.9711	1.0262	29.2073	0.0000	27.9362	32.0060	4.3812	4.8161
Jan	-2.3096	1.1650	-1.9824	0.0501	-4.6199	0.0007	-0.0904	0.4442
Feb	-0.7704	1.1651	-0.6612	0.5100	-3.0809	1.5401	-0.5977	-0.0631
Mar	-0.8161	1.1653	-0.7003	0.4853	-3.1269	1.4947	-0.5800	-0.0454
Apr	-1.3601	1.1671	-1.1653	0.2466	-3.6745	0.9544	-0.4491	0.0880
May	1.0757	1.1686	0.9204	0.3595	-1.2418	3.3931	0.0664	0.6039
Jun	8.2049	1.1692	7.0173	0.0000	5.8863	10.5236	1.5893	2.1274
Jul	14.4720	1.1692	12.3781	0.0000	12.1535	16.7905	3.0936	3.6314
Aug	15.0570	1.1710	12.8577	0.0000	12.7347	17.3792	3.0495	3.5871
Sep	13.2419	1.1714	11.3044	0.0000	10.9190	15.5648	2.6027	3.1405
Oct	10.4589	1.1659	8.9706	0.0000	8.1469	12.7710	1.1906	1.7252
Nov	1.3872	1.1655	1.1903	0.2366	-0.9240	3.6984	-0.0387	0.4958
Trend	-0.0257	0.0088	-2.9123	0.0044	-0.0433	-0.0082	-0.0084	-0.0050
Rain	-1.4721	0.2953	-4.9854	0.0000	-2.0577	-0.8866	-0.2999	-0.1944
CDD	0.0387	0.0094	4.1277	0.0001	0.0201	0.0573	0.0050	0.0095
COVID	-4.4395	0.8563	-5.1843	0.0000	-6.1376	-2.7413	0.2478	0.8078

New Jersey-American Water Company
2022 Cost of Service Study - Rate Design Comparison

Rates for General Service, OIW, and Resale Customers

Meter Size	Group 1 Non-Exempt Current Meter Charge	Group 1 Non-Exempt Proposed Meter Charge	Group 1 Exempt Current Meter Charge	Group 1 Exempt Proposed Meter Charge	Sch. A-15 Current Meter Charge	Sch. A-15 Proposed Meter Charge	Sch. A-16 Current Meter Charge	Sch. A-16 Proposed Meter Charge	Sch. A-17 Current Meter Charge	Sch. A-17 Proposed Meter Charge
5/8" Monthly	$ 18.50	$ 22.09	$ 15.98	$ 19.07	$ 14.00	$ 17.59	$ 9.50	$ 13.30	$ 34.17	$ 34.17
3/4" Monthly	$ 27.77	$ 33.15	$ 23.99	$ 28.63	$ 17.00	$ 22.38	$ 17.50	$ 19.90	$ 34.17	$ 34.17
1" Monthly	$ 46.26	$ 55.23	$ 39.96	$ 47.69	$ 20.00	$ 28.97	$ 25.00	$ 33.10	$ 44.19	$ 44.19
1 1/2" Mthly	$ 92.55	$ 110.50	$ 79.93	$ 95.41	$ 25.00	$ 42.95	$ 37.50	$ 66.30	$ 251.96	$ 251.96
2" Monthly	$ 147.99	$ 176.71	$ 127.82	$ 152.58	$ 30.00	$ 58.72	$ 60.00	$ 106.00	$ 307.43	$ 307.43
3" Monthly	$ 277.55	$ 331.39	$ 239.71	$ 286.15	$ 40.00	$ 93.84	$ 112.50	$ 198.80	$ 469.06	$ 469.06
4" Monthly	$ 462.55	$ 552.29	$ 399.50	$ 476.88	$ 50.00	$ 139.74	$ 187.50	$ 331.40	$ 515.02	$ 515.02
6" Monthly	$ 925.00	$ 1,104.48	$ 798.92	$ 953.68	$ 925.00	$ 1,104.48	$ 925.00	$ 662.70		
8" Monthly	$ 1,480.05	$ 1,767.21	$ 1,278.31	$ 1,525.92	$ 1,480.05	$ 1,767.21				
10" Monthly	$ 1,850.00	$ 2,208.95	$ 1,597.83	$ 1,907.35	$ 1,850.00	$ 2,208.95				
12" Monthly	$ 2,312.27	$ 2,760.96	$ 1,997.10	$ 2,383.99	$ 2,312.27	$ 2,760.96				
16" Monthly	$ 3,700.00	$ 4,417.90	$ 3,195.67	$ 3,814.70	$ 3,700.00	$ 4,417.90				

Note: Group 1 refers to all rate schedules for which monthly meter charges currently apply except for Schedule A-15, A-16, and A-17.

Volumetric Rates		Current Volumetric Charge	Proposed Volumetric Charge
Schedule A-1	All	$ 6.8884	$ 8.1169
Schedule A-10	All	$ 6.4376	$ 8.1169
Schedule A-14	All	$ 6.8884	$ 8.1169
Schedule A-15	All	$ 6.8884	$ 8.1169
Schedule A-16	All	$ 3.7150	$ 4.8099
Schedule A-17	All	$ 7.0000	$ 7.0000
Schedule A-2	All	$ 6.8884	$ 8.1169
Schedule F	Non-Exempt	$ 3.7846	$ 4.2786
Schedule F	Exempt	$ 3.2687	$ 3.6944
Schedule C	Commodity - N.E.	$ 0.4865	$ 0.6305
Schedule C	Demand - N.E.	$ 57.76	$ 74.86
Schedule C	Commodity - Exempt	$ 0.4865	$ 0.5444
Schedule C	Demand - Exempt	$ 57.76	$ 64.64
Schedule D	Commodity	$ 0.5633	$ 0.6305
Schedule D	Demand	$ 61.51	$ 68.85
Schedule G	Non-Exempt	$ 2.9574	$ 3.3038
Schedule G	Exempt	$ 2.5543	$ 2.8527
Schedule E	Uninterruptible	$ 1.8350	$ 2.1026
Schedule E	Interruptible	$ 6.8884	$ 7.1560
Schedule H	Non-Exempt	$ 9.1362	$ 10.7656
Schedule I	Non-Exempt	$ 5.3971	$ 6.3596
Schedule J	Uninterruptible	$ 2.6389	$ 3.0237

Current Private Fire Rates

Present Rate	Sch. L-1	Sch. L-2	Sch. L-3	Sch. L-7	Sch. L-9	Sch. L-10 with hose	Sch. L-10 w/o hose	Sch. L-11	Sch. L-12	Sch. L-13
2" service	$ 20.64	$ -	$ 39.40	$ 20.64	$ 26.75	$ 151.65	$ 50.54	$ 20.64	$ -	$ 62.50
3" service	$ 46.40	$ -	$ 77.40	$ 46.40	$ 60.20	$ 151.65	$ 106.10	$ 46.40	$ -	$ 62.50
4" service	$ 82.50	$ -	$ 124.80	$ 82.50	$ 107.00	$ 252.75	$ 176.90	$ 82.50	$ -	$ 62.50
6" service	$ 185.70	$ -	$ 231.50	$ 185.70	$ 240.70	$ 505.50	$ 353.80	$ 185.70	$ -	$ 133.33
8" service	$ 330.20	$ -	$ 395.30	$ 330.20	$ 427.90	$ 808.80	$ 566.00	$ 330.20	$ -	$ 250.00
10" service	$ 516.00	$ -	$ 516.20	$ 516.00	$ 668.80	$ 1,253.65	$ 884.40	$ 516.00	$ -	$ 583.33
12" service	$ 743.00	$ -	$ 743.30	$ 743.00	$ 963.00	$ -	$ -	$ 743.00	$ -	$ -
16" service	$ 1,321.00	$ -	$ 1,460.50	$ 1,321.00	$ 1,712.00	$ -	$ -	$ 1,321.00	$ -	$ -
20" service	$ -	$ -	$ 2,661.70	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Sprinkler Head	$ -	$ 0.93	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Private Hydrants	$ -	$ 46.63	$ 60.20	$ 26.83	$ 31.81	$ 60.20	$ 60.20	$ 27.18	$ 26.83	$ 10.42
Usage Per TG	$ 6.8884	$ -	$ 6.8884	$ 6.8884	$ 6.4376	$ -	$ 6.4376	$ -	$ -	$ -

Proposed Private Fire Rates

Present Rate	Sch. L-1	Sch. L-2	Sch. L-3	Sch. L-7	Sch. L-9	Sch. L-10 with hose	Sch. L-10 w/o hose	Sch. L-11	Sch. L-12	Sch. L-13
2" service	$ 26.60	$ 26.60	$ 51.20	$ 26.60	$ 31.50	$ 183.00	$ 65.00	$ 26.60	$ -	$ 62.50
3" service	$ 59.84	$ 59.84	$ 100.58	$ 59.84	$ 70.87	$ 183.00	$ 136.00	$ 59.84	$ -	$ 62.50
4" service	$ 106.37	$ 106.37	$ 162.18	$ 106.37	$ 125.96	$ 305.00	$ 227.00	$ 106.37	$ -	$ 62.50
6" service	$ 239.34	$ 239.34	$ 300.84	$ 239.34	$ 283.42	$ 610.00	$ 454.00	$ 239.34	$ -	$ 133.33
8" service	$ 425.50	$ 425.50	$ 513.70	$ 425.50	$ 503.88	$ 976.00	$ 726.00	$ 425.50	$ -	$ 250.00
10" service	$ 665.00	$ 665.00	$ 670.81	$ 665.00	$ 787.50	$ 1,513.00	$ 1,134.00	$ 665.00	$ -	$ 583.33
12" service	$ 957.60	$ 957.60	$ 965.93	$ 957.60	$ 1,134.00	$ -	$ -	$ 957.60	$ -	$ -
16" service	$ 1,702.40	$ 1,702.40	$ 1,897.94	$ 1,702.40	$ 2,016.00	$ -	$ -	$ 1,702.40	$ -	$ -
20" service	$ -	$ -	$ 3,458.92	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Sprinkler Head	$ -	$ 1.25	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Private Hydrants	$ -	$ 52.93	$ 62.82	$ 45.08	$ 37.81	$ 70.59	$ 70.59	$ 33.18	$ 32.83	$ 10.42
Usage Per TG	$ 8.1169	$ -	$ 8.1169	$ 8.1169	$ 8.1169	$ -	$ 8.1169	$ -	$ -	$ -

Public Fire Rates

Schedule		Present Rate		Proposed Rate
Sch M-1 - Statewide	$	51.76	$	57.82
Sch M-2 - Logan/Ortley	$	46.93	$	52.93
Sch M-3 - Adelphia	$	47.20	$	53.20
Sch M-5 Zone 2A	$	45.95	$	51.95
Sch M-5 Zone 2C	$	51.76	$	57.82
Sch M-5 Zone 2D	$	52.98	$	59.18
Sch M-5 Zone 2E	$	55.41	$	61.58
Sch M-5 Zone 2F	$	55.41	$	61.58
Sch M-5 Zone 2G	$	59.40	$	61.58
Sch M-5 Zone 2H	$	63.74	$	63.74
Sch M-5 Zone 2I	$	65.78	$	65.78
Sch M-5 Zone 2J	$	66.67	$	66.67
Sch M-5 Zone 2K	$	70.59	$	70.59
Sch M-5 Zone 2L	$	74.50	$	70.59
Sch M-6 Zone 3A	$	29.77	$	35.77
Sch M-6 Zone 3B	$	34.26	$	40.26
Sch M-6 Zone 3C	$	38.76	$	44.76
Sch M-6 Zone 3D	$	43.26	$	49.26
Sch M-6 Zone 3G	$	49.99	$	55.99
Sch M-7 (SA 1A)	$	38.46	$	44.46
Sch M-8 (SA 1B)	$	31.81	$	37.81
Sch M-9 (SA 1C)	$	74.50	$	70.59
Sch M-10 (SA 1D)	$	27.18	$	33.18
Sch M-11 (SA 1F)	$	26.83	$	32.83
Sch. M-12	$	10.42	$	10.42

Current Sewer Rates

Non-Exempt	Ocean City Sch 1-A	Lakewood Sch 2-A	Adelphia Sch 3-A	Gen Class A Sch 5-A	Gen Class B Sch 5-A	State Vol Sch 6-A	Contracts Sch 7-A	Contracts Sch 8-A	Jensen Sch 10-A	Haddonfield Sch 11-A	Elk Sch 12-A	Long Hill Sch 14-A	Long Hill Sch 15-A	Egg Harbor Sch 16-A	Egg Harbor Sch 17-A	Bound Brook Sch 18-A	Bound Brook Sch 19-A
Min Per TG	$ 12.25																
Fixed Charge		$ 15.00	$ 12.25	$ 77.12	$ 93.18	$ 45.00	$ 148.75	$ 110.00	$ 24.00	$ 4.20	$ 17.50	$ 14.58	$ 14.58	$ 58.33	$ 10.83	$ 39.58	$ 5.00
Usage	$ 2.1500	$ 3.9520	$ 4.0340			$ 8.0300	$ 2.7370		$ 8.5622	$ 3.2202	$ 6.9300		$ 18.2700		$ 7.5000		$ 6.4000

Proposed Sewer Rates

Non-Exempt	Ocean City Sch 1-A	Lakewood Sch 2-A	Adelphia Sch 3-A	Gen Class A Sch 5-A	Gen Class B Sch 5-A	State Vol Sch 6-A	Contracts Sch 7-A	Contracts Sch 8-A	Jensen Sch 10-A	Haddonfield Sch 11-A	Elk Sch 12-A	Long Hill Sch 14-A	Long Hill Sch 15-A	Egg Harbor Sch 16-A	Egg Harbor Sch 17-A	Bound Brook Sch 18-A	Bound Brook Sch 19-A
Min Per TG	$ 14.50																
Fixed Charge		$ 15.00	$ 15.00	$ 82.50	$ 99.68	$ 50.00	$ 148.75	$ 125.00	$ 30.00	$ 8.00	$ 20.00	$ 15.02	$ 15.02	$ 58.33	$ 10.83	$ 39.58	$ 5.00
Usage	$ 2.1750	$ 4.7550	$ 5.3300			$ 8.0400	$ 3.1025		$ 8.5000	$ 3.6500	$ 9.5000		$ 18.8180		$ 7.5000		$ 6.4000

Schedule 13-A Mt. Ephraim	Present Rate	Proposed Rate
Single Family dwelling	$ 8.58	$ 8.84
Unrecirculated Air-Con Unit	$ 2.14	$ 2.20
Self service laundries	$ 3.43	$ 3.53
Lodges, meeting halls	$ 4.30	$ 4.43
Post offices	$ 6.87	$ 7.08
Gas Service Stations	$ 17.17	$ 17.69
Drive In Restaurants < 50 seats	$ 25.75	$ 26.52
Restaurants 51-75 seats	$ 34.33	$ 35.36
Restaurants 76-100 seats	$ 42.92	$ 44.21
Each additional Employee	$ 1.72	$ 1.77

New Jersey-American Water Company

2022 Cost of Service Study - Residential Bill Comparison

Statewide - Schedule A-1

PWAC: $ 0.4221

Meter Size	Lower Limit	Upper Limit	Current Monthly Bill	Proposed Monthly Bill	Monthly Increase	Percentage Monthly Increase
5/8-METER	-	1,000	$ 25.74	$ 26.36	$ 0.61	2.4%
5/8-METER	1,000	2,000	$ 33.06	$ 34.90	$ 1.84	5.6%
5/8-METER	2,000	3,000	$ 40.37	$ 43.44	$ 3.07	7.6%
5/8-METER	3,000	4,000	$ 47.68	$ 51.98	$ 4.30	9.0%
5/8-METER	4,000	5,000	$ 54.99	$ 60.52	$ 5.53	10.1%
5/8-METER	5,000	6,000	$ 62.30	$ 69.05	$ 6.76	10.8%
5/8-METER	6,000	7,000	$ 69.61	$ 77.59	$ 7.99	11.5%
5/8-METER	7,000	8,000	$ 76.92	$ 86.13	$ 9.21	12.0%
5/8-METER	8,000	9,000	$ 84.23	$ 94.67	$ 10.44	12.4%
5/8-METER	9,000	10,000	$ 91.54	$ 103.21	$ 11.67	12.7%
5/8-METER	10,000	12,000	$ 102.51	$ 116.02	$ 13.51	13.2%
5/8-METER	12,000	14,000	$ 117.13	$ 133.10	$ 15.97	13.6%
5/8-METER	14,000	16,000	$ 131.75	$ 150.17	$ 18.43	14.0%
5/8-METER	16,000	18,000	$ 146.37	$ 167.25	$ 20.88	14.3%
5/8-METER	18,000	20,000	$ 160.99	$ 184.33	$ 23.34	14.5%
5/8-METER	20,000	25,000	$ 186.58	$ 214.22	$ 27.64	14.8%
5/8-METER	25,000	30,000	$ 223.13	$ 256.91	$ 33.78	15.1%
5/8-METER	30,000	35,000	$ 259.68	$ 299.61	$ 39.93	15.4%
5/8-METER	35,000	40,000	$ 296.23	$ 342.30	$ 46.07	15.6%
5/8-METER	40,000	45,000	$ 332.79	$ 385.00	$ 52.21	15.7%
5/8-METER	45,000	50,000	$ 369.34	$ 427.69	$ 58.35	15.8%
5/8-METER	50,000	100,000	$ 570.38	$ 662.51	$ 92.14	16.2%

New Jersey-American Water Company

2022 Cost of Service Study - Residential Bill Comparison

Statewide - Schedule A-10

Meter Size	Lower Limit	Upper Limit	Current Monthly Bill	Proposed Monthly Bill	Monthly Increase	Percentage Monthly Increase
5/8-METER	-	1,000	$ 25.52	$ 26.36	$ 0.84	3.3%
5/8-METER	1,000	2,000	$ 32.38	$ 34.90	$ 2.52	7.8%
5/8-METER	2,000	3,000	$ 39.24	$ 43.44	$ 4.20	10.7%
5/8-METER	3,000	4,000	$ 46.10	$ 51.98	$ 5.88	12.7%
5/8-METER	4,000	5,000	$ 52.96	$ 60.52	$ 7.56	14.3%
5/8-METER	5,000	6,000	$ 59.82	$ 69.05	$ 9.24	15.4%
5/8-METER	6,000	7,000	$ 66.68	$ 77.59	$ 10.92	16.4%
5/8-METER	7,000	8,000	$ 73.54	$ 86.13	$ 12.59	17.1%
5/8-METER	8,000	9,000	$ 80.40	$ 94.67	$ 14.27	17.8%
5/8-METER	9,000	10,000	$ 87.26	$ 103.21	$ 15.95	18.3%
5/8-METER	10,000	12,000	$ 97.55	$ 116.02	$ 18.47	18.9%
5/8-METER	12,000	14,000	$ 111.27	$ 133.10	$ 21.83	19.6%
5/8-METER	14,000	16,000	$ 124.99	$ 150.17	$ 25.19	20.2%
5/8-METER	16,000	18,000	$ 138.70	$ 167.25	$ 28.55	20.6%
5/8-METER	18,000	20,000	$ 152.42	$ 184.33	$ 31.91	20.9%
5/8-METER	20,000	25,000	$ 176.43	$ 214.22	$ 37.78	21.4%
5/8-METER	25,000	30,000	$ 210.73	$ 256.91	$ 46.18	21.9%
5/8-METER	30,000	35,000	$ 245.03	$ 299.61	$ 54.58	22.3%
5/8-METER	35,000	40,000	$ 279.33	$ 342.30	$ 62.97	22.5%
5/8-METER	40,000	45,000	$ 313.63	$ 385.00	$ 71.37	22.8%
5/8-METER	45,000	50,000	$ 347.93	$ 427.69	$ 79.77	22.9%
5/8-METER	50,000	100,000	$ 536.57	$ 662.51	$ 125.95	23.5%

New Jersey-American Water Company

2022 Cost of Service Study - Residential Bill Comparison

Haddonfield - Schedule A-15

Meter Size	Lower Limit	Upper Limit	Current Monthly Bill	Proposed Monthly Bill	Monthly Increase	Percentage Monthly Increase
5/8-METER	-	1,000	$ 21.24	$ 21.86	$ 0.61	2.9%
5/8-METER	1,000	2,000	$ 28.56	$ 30.40	$ 1.84	6.5%
5/8-METER	2,000	3,000	$ 35.87	$ 38.94	$ 3.07	8.6%
5/8-METER	3,000	4,000	$ 43.18	$ 47.48	$ 4.30	10.0%
5/8-METER	4,000	5,000	$ 50.49	$ 56.02	$ 5.53	10.9%
5/8-METER	5,000	6,000	$ 57.80	$ 64.55	$ 6.76	11.7%
5/8-METER	6,000	7,000	$ 65.11	$ 73.09	$ 7.99	12.3%
5/8-METER	7,000	8,000	$ 72.42	$ 81.63	$ 9.21	12.7%
5/8-METER	8,000	9,000	$ 79.73	$ 90.17	$ 10.44	13.1%
5/8-METER	9,000	10,000	$ 87.04	$ 98.71	$ 11.67	13.4%
5/8-METER	10,000	12,000	$ 98.01	$ 111.52	$ 13.51	13.8%
5/8-METER	12,000	14,000	$ 112.63	$ 128.60	$ 15.97	14.2%
5/8-METER	14,000	16,000	$ 127.25	$ 145.67	$ 18.43	14.5%
5/8-METER	16,000	18,000	$ 141.87	$ 162.75	$ 20.88	14.7%
5/8-METER	18,000	20,000	$ 156.49	$ 179.83	$ 23.34	14.9%
5/8-METER	20,000	25,000	$ 182.08	$ 209.72	$ 27.64	15.2%
5/8-METER	25,000	30,000	$ 218.63	$ 252.41	$ 33.78	15.5%
5/8-METER	30,000	35,000	$ 255.18	$ 295.11	$ 39.93	15.6%
5/8-METER	35,000	40,000	$ 291.73	$ 337.80	$ 46.07	15.8%
5/8-METER	40,000	45,000	$ 328.29	$ 380.50	$ 52.21	15.9%
5/8-METER	45,000	50,000	$ 364.84	$ 423.19	$ 58.35	16.0%
5/8-METER	50,000	100,000	$ 565.88	$ 658.01	$ 92.14	16.3%

New Jersey-American Water Company

2022 Cost of Service Study - Residential Bill Comparison

Roxbury - Schedule A-16

Meter Size	Lower Limit	Upper Limit	Current Monthly Bill	Proposed Monthly Bill	Monthly Increase	Percentage Monthly Increase
5/8-METER	-	1,000	$ 11.57	$ 15.92	$ 4.35	37.6%
5/8-METER	1,000	2,000	$ 15.71	$ 21.15	$ 5.44	34.7%
5/8-METER	2,000	3,000	$ 19.84	$ 26.38	$ 6.54	32.9%
5/8-METER	3,000	4,000	$ 23.98	$ 31.61	$ 7.63	31.8%
5/8-METER	4,000	5,000	$ 28.12	$ 36.84	$ 8.73	31.0%
5/8-METER	5,000	6,000	$ 32.25	$ 42.08	$ 9.82	30.5%
5/8-METER	6,000	7,000	$ 36.39	$ 47.31	$ 10.92	30.0%
5/8-METER	7,000	8,000	$ 40.53	$ 52.54	$ 12.01	29.6%
5/8-METER	8,000	9,000	$ 44.67	$ 57.77	$ 13.11	29.3%
5/8-METER	9,000	10,000	$ 48.80	$ 63.00	$ 14.20	29.1%
5/8-METER	10,000	12,000	$ 55.01	$ 70.85	$ 15.84	28.8%
5/8-METER	12,000	14,000	$ 63.28	$ 81.32	$ 18.03	28.5%
5/8-METER	14,000	16,000	$ 71.56	$ 91.78	$ 20.22	28.3%
5/8-METER	16,000	18,000	$ 79.83	$ 102.24	$ 22.41	28.1%
5/8-METER	18,000	20,000	$ 88.10	$ 112.71	$ 24.60	27.9%
5/8-METER	20,000	25,000	$ 102.58	$ 131.02	$ 28.44	27.7%
5/8-METER	25,000	30,000	$ 123.27	$ 157.18	$ 33.91	27.5%
5/8-METER	30,000	35,000	$ 143.96	$ 183.34	$ 39.38	27.4%
5/8-METER	35,000	40,000	$ 164.64	$ 209.50	$ 44.86	27.2%
5/8-METER	40,000	45,000	$ 185.33	$ 235.66	$ 50.33	27.2%
5/8-METER	45,000	50,000	$ 206.01	$ 261.82	$ 55.81	27.1%
5/8-METER	50,000	100,000	$ 319.78	$ 405.70	$ 85.92	26.9%

New Jersey-American Water Company
2022 Cost of Service Study - Commercial/Industrial Bill Comparison

Statewide - Schedule A-1

PWAC: $ 0.4221

Meter Size	Lower Limit	Upper Limit	Current Monthly Bill	Proposed Monthly Bill	Monthly Increase	Percentage Monthly Increase
5/8-METER	-	1,000	$ 25.74	$ 26.36	$ 0.61	2.4%
5/8-METER	1,000	2,000	$ 33.06	$ 34.90	$ 1.84	5.6%
5/8-METER	2,000	3,000	$ 40.37	$ 43.44	$ 3.07	7.6%
5/8-METER	3,000	4,000	$ 47.68	$ 51.98	$ 4.30	9.0%
5/8-METER	4,000	5,000	$ 54.99	$ 60.52	$ 5.53	10.1%
5/8-METER	5,000	10,000	$ 76.92	$ 86.13	$ 9.21	12.0%
5/8-METER	10,000	15,000	$ 113.47	$ 128.83	$ 15.36	13.5%
5/8-METER	15,000	20,000	$ 150.02	$ 171.52	$ 21.50	14.3%
1-METER	20,000	25,000	$ 219.72	$ 247.36	$ 27.64	12.6%
1-METER	25,000	30,000	$ 256.27	$ 290.06	$ 33.78	13.2%
1-METER	30,000	40,000	$ 311.10	$ 354.10	$ 43.00	13.8%
1-METER	40,000	50,000	$ 384.21	$ 439.49	$ 55.28	14.4%
1-METER	50,000	75,000	$ 512.14	$ 588.92	$ 76.78	15.0%
1-METER	75,000	100,000	$ 694.90	$ 802.40	$ 107.49	15.5%
1-METER	100,000	200,000	$ 1,151.81	$ 1,336.08	$ 184.28	16.0%
1-METER	200,000	300,000	$ 1,882.86	$ 2,189.98	$ 307.13	16.3%
1-METER	300,000	400,000	$ 2,613.91	$ 3,043.88	$ 429.98	16.4%
1-METER	400,000	500,000	$ 3,344.96	$ 3,897.78	$ 552.83	16.5%
1-METER	500,000	1,000,000	$ 5,538.11	$ 6,459.48	$ 921.38	16.6%
1-METER	1,000,000	1,500,000	$ 9,193.36	$ 10,728.98	$ 1,535.63	16.7%
1-METER	1,500,000	2,000,000	$ 12,848.61	$ 14,998.48	$ 2,149.88	16.7%
1-METER	2,000,000	2,500,000	$ 16,503.86	$ 19,267.98	$ 2,764.13	16.7%
1-METER	2,500,000	5,000,000	$ 27,469.61	$ 32,076.48	$ 4,606.88	16.8%
1-METER	5,000,000	10,000,000	$ 54,883.98	$ 64,097.73	$ 9,213.75	16.8%
6-METER			$ 675,498.10	$ 788,827.23	$ 113,329.13	16.8%

Statewide - Schedule A-10

Meter Size	Lower Limit	Upper Limit	Current Monthly Bill	Proposed Monthly Bill	Monthly Increase	Percentage Monthly Increase
1-METER	-	1,000	$ 25.52	$ 26.36	$ 0.84	3.3%
1-METER	1,000	2,000	$ 32.38	$ 34.90	$ 2.52	7.8%
1-METER	2,000	3,000	$ 39.24	$ 43.44	$ 4.20	10.7%
1-METER	3,000	4,000	$ 46.10	$ 51.98	$ 5.88	12.7%
1-METER	4,000	5,000	$ 52.96	$ 60.52	$ 7.56	14.3%
1-METER	5,000	10,000	$ 73.54	$ 86.13	$ 12.59	17.1%
1-METER	10,000	15,000	$ 107.84	$ 128.83	$ 20.99	19.5%
1-METER	15,000	20,000	$ 142.13	$ 171.52	$ 29.39	20.7%
1-METER	20,000	25,000	$ 209.58	$ 247.36	$ 37.78	18.0%
1-METER	25,000	30,000	$ 243.88	$ 290.06	$ 46.18	18.9%
1-METER	30,000	40,000	$ 295.32	$ 354.10	$ 58.78	19.9%
1-METER	40,000	50,000	$ 363.92	$ 439.49	$ 75.57	20.8%
1-METER	50,000	75,000	$ 483.97	$ 588.92	$ 104.96	21.7%
1-METER	75,000	100,000	$ 655.46	$ 802.40	$ 146.94	22.4%
1-METER	100,000	200,000	$ 1,084.19	$ 1,336.08	$ 251.90	23.2%
1-METER	200,000	300,000	$ 1,770.16	$ 2,189.98	$ 419.83	23.7%
1-METER	300,000	400,000	$ 2,456.13	$ 3,043.88	$ 587.76	23.9%
1-METER	400,000	500,000	$ 3,142.10	$ 3,897.78	$ 755.68	24.1%
1-METER	500,000	1,000,000	$ 5,200.01	$ 6,459.48	$ 1,259.48	24.2%
1-METER	1,000,000	1,500,000	$ 8,629.86	$ 10,728.98	$ 2,099.13	24.3%
1-METER	1,500,000	2,000,000	$ 12,059.71	$ 14,998.48	$ 2,938.78	24.4%
1-METER	2,000,000	2,500,000	$ 15,489.56	$ 19,267.98	$ 3,778.43	24.4%
1-METER	2,500,000	5,000,000	$ 25,779.11	$ 32,076.48	$ 6,297.38	24.4%
1-METER	5,000,000	10,000,000	$ 51,502.98	$ 64,097.73	$ 12,594.75	24.5%
4-METER			$ 76,660.66	$ 95,292.49	$ 18,631.83	24.3%

Haddonfield - Schedule A-15

Meter Size	Lower Limit	Upper Limit	Current Monthly Bill	Proposed Monthly Bill	Monthly Increase	Percentage Monthly Increase
1-METER	-	1,000	$ 21.24	$ 21.86	$ 0.61	2.9%
1-METER	1,000	2,000	$ 28.56	$ 30.40	$ 1.84	6.5%
1-METER	2,000	3,000	$ 35.87	$ 38.94	$ 3.07	8.6%
1-METER	3,000	4,000	$ 43.18	$ 47.48	$ 4.30	10.0%
1-METER	4,000	5,000	$ 50.49	$ 56.02	$ 5.53	10.9%
1-METER	5,000	10,000	$ 72.42	$ 81.63	$ 9.21	12.7%
1-METER	10,000	15,000	$ 108.97	$ 124.33	$ 15.36	14.1%
1-METER	15,000	20,000	$ 145.52	$ 167.02	$ 21.50	14.8%
1-METER	20,000	25,000	$ 193.46	$ 221.10	$ 27.64	14.3%
1-METER	25,000	30,000	$ 230.01	$ 263.80	$ 33.78	14.7%
1-METER	30,000	40,000	$ 284.84	$ 327.84	$ 43.00	15.1%
1-METER	40,000	50,000	$ 357.95	$ 413.23	$ 55.28	15.4%
1-METER	50,000	75,000	$ 485.88	$ 562.66	$ 76.78	15.8%
1-METER	75,000	100,000	$ 668.64	$ 776.14	$ 107.49	16.1%
1-METER	100,000	200,000	$ 1,125.55	$ 1,309.82	$ 184.28	16.4%
1-METER	200,000	300,000	$ 1,856.60	$ 2,163.72	$ 307.13	16.5%
1-METER	300,000	400,000	$ 2,587.65	$ 3,017.62	$ 429.98	16.6%
1-METER	400,000	500,000	$ 3,318.70	$ 3,871.52	$ 552.82	16.7%
1-METER	500,000	1,000,000	$ 5,511.85	$ 6,433.22	$ 921.38	16.7%
1-METER	1,000,000	1,500,000	$ 9,167.10	$ 10,702.72	$ 1,535.63	16.8%
1-METER	1,500,000	2,000,000	$ 12,822.35	$ 14,972.22	$ 2,149.88	16.8%
1-METER	2,000,000	2,500,000	$ 16,477.60	$ 19,241.72	$ 2,764.13	16.8%
1-METER	2,500,000	5,000,000	$ 27,443.35	$ 32,050.22	$ 4,606.88	16.8%
1-METER	5,000,000	10,000,000	$ 54,857.72	$ 64,071.47	$ 9,213.75	16.8%

Roxbury - Schedule A-16

Meter Size	Lower Limit	Upper Limit	Current Monthly Bill	Proposed Monthly Bill	Monthly Increase	Percentage Monthly Increase
1-METER	-	1,000	$ 11.57	$ 15.92	$ 4.35	37.6%
1-METER	1,000	2,000	$ 15.71	$ 21.15	$ 5.44	34.7%
1-METER	2,000	3,000	$ 19.84	$ 26.38	$ 6.54	32.9%
1-METER	3,000	4,000	$ 23.98	$ 31.61	$ 7.63	31.8%
1-METER	4,000	5,000	$ 28.12	$ 36.84	$ 8.73	31.0%
1-METER	5,000	10,000	$ 40.53	$ 52.54	$ 12.01	29.6%
1-METER	10,000	15,000	$ 61.21	$ 78.70	$ 17.49	28.6%
1-METER	15,000	20,000	$ 81.90	$ 104.86	$ 22.96	28.0%
1-METER	20,000	25,000	$ 118.08	$ 150.82	$ 32.74	27.7%
1-METER	25,000	30,000	$ 138.77	$ 176.98	$ 38.21	27.5%
1-METER	30,000	40,000	$ 169.80	$ 216.22	$ 46.42	27.3%
1-METER	40,000	50,000	$ 211.17	$ 268.54	$ 57.37	27.2%
1-METER	50,000	75,000	$ 283.57	$ 360.10	$ 76.53	27.0%
1-METER	75,000	100,000	$ 387.00	$ 490.90	$ 103.91	26.8%
1-METER	100,000	200,000	$ 645.57	$ 817.90	$ 172.34	26.7%
1-METER	200,000	300,000	$ 1,059.28	$ 1,341.10	$ 281.83	26.6%
1-METER	300,000	400,000	$ 1,472.99	$ 1,864.31	$ 391.32	26.6%
1-METER	400,000	500,000	$ 1,886.70	$ 2,387.51	$ 500.81	26.5%
1-METER	500,000	1,000,000	$ 3,127.83	$ 3,957.11	$ 829.29	26.5%
1-METER	1,000,000	1,500,000	$ 5,196.38	$ 6,573.12	$ 1,376.75	26.5%
1-METER	1,500,000	2,000,000	$ 7,264.93	$ 9,189.13	$ 1,924.21	26.5%
1-METER	2,000,000	2,500,000	$ 9,333.48	$ 11,805.14	$ 2,471.67	26.5%
1-METER	2,500,000	5,000,000	$ 15,539.13	$ 19,653.17	$ 4,114.05	26.5%
1-METER	5,000,000	10,000,000	$ 31,053.25	$ 39,273.24	$ 8,219.99	26.5%

New Jersey-American Water Company
2022 Cost of Service Study - Customer Impacts OIW-Resale

GENERAL SERVICE SOS - SCHEDULE A2

Number	Rate	Demand	Usage	Current Fixed Revenue	Current Volumetric Revenue	Current Total Revenue	Proposed Fixed Revenue	Proposed Volumetric Revenue	Proposed Total Revenue	Increase
1	A2		138,667	$ 13,254	$ 1,026,540	$ 1,039,794	$ 13,254	$ 1,196,893	$ 1,210,147	16.4%
2	A2		240,000	$ 38,437	$ 1,776,696	$ 1,815,133	$ 38,437	$ 2,071,536	$ 2,109,973	16.2%
3	A2		15,965	$ 6,627	$ 118,187	$ 124,815	$ 6,627	$ 137,800	$ 144,428	15.7%
4	A2		34,539	$ 13,254	$ 255,691	$ 268,945	$ 13,254	$ 298,123	$ 311,377	15.8%
5	A2		37,988	$ 13,254	$ 281,224	$ 294,478	$ 13,254	$ 327,893	$ 341,146	15.8%
			467,160	84,826	3,458,339	3,543,164	84,826	4,032,245	4,117,070	16.2%

COMMODITY DEMAND - SCHEDULE C D

Number	Rate	Demand	Usage	Current Fixed Revenue	Current Volumetric Revenue	Current Total Revenue	Proposed Fixed Revenue	Proposed Volumetric Revenue	Proposed Total Revenue	Increase
6	C	4,944	66,336	$ 6,627	$ 402,151	$ 408,779	$ 6,627	$ 446,062	$ 452,690	10.7%
7	C	7,200	219,000	$ 6,627	$ 717,574	$ 724,202	$ 6,627	$ 789,747	$ 796,374	10.0%
8	C	600	18,250	$ -	$ 59,798	$ 59,798	$ -	$ 65,812	$ 65,812	10.1%
9	C	9,744	296,380	$ 13,254	$ 971,117	$ 984,371	$ 13,254	$ 1,068,791	$ 1,082,045	9.9%
10	C	3,286	99,934	$ 6,627	$ 327,443	$ 334,071	$ 6,627	$ 360,377	$ 367,005	9.9%
11	C	30,000	912,500	$ 33,132	$ 2,989,893	$ 3,023,024	$ 33,132	$ 3,290,613	$ 3,323,744	9.9%
12	C	9,000	273,750	$ 13,254	$ 896,968	$ 910,221	$ 13,254	$ 987,184	$ 1,000,437	9.9%
13	C	19,200	584,000	$ 21,207	$ 1,913,531	$ 1,934,738	$ 21,207	$ 2,105,992	$ 2,127,199	9.9%
14	C	9,600	292,000	$ 19,881	$ 956,766	$ 976,647	$ 19,881	$ 1,052,996	$ 1,072,877	9.9%
15	C	12,432	378,140	$ 13,254	$ 1,239,011	$ 1,252,265	$ 13,254	$ 1,363,630	$ 1,376,884	10.0%
16	C	3,288	100,010	$ 6,627	$ 327,692	$ 334,320	$ 6,627	$ 360,651	$ 367,279	9.9%
17	C	5,400	164,250	$ 8,748	$ 538,181	$ 546,929	$ 8,748	$ 592,310	$ 601,058	9.9%
18	C	12,000	365,000	$ 13,254	$ 1,195,957	$ 1,209,211	$ 13,254	$ 1,316,245	$ 1,329,499	9.9%
19	C	3,456	105,120	$ 6,627	$ 344,436	$ 351,063	$ 6,627	$ 379,079	$ 385,706	9.9%
20	C	1,500	45,625	$ 6,627	$ 149,495	$ 156,122	$ 6,627	$ 164,531	$ 171,158	9.6%
21	C	7,200	219,000	$ 21,207	$ 717,574	$ 738,781	$ 21,207	$ 789,747	$ 810,954	9.8%
22	C	600	18,250	$ 3,977	$ 59,798	$ 63,775	$ 3,977	$ 65,812	$ 69,789	9.4%
23	C	600	18,250	$ 3,977	$ 59,798	$ 63,775	$ 3,977	$ 65,812	$ 69,789	9.4%
24	C	2,520	76,650	$ 6,627	$ 251,151	$ 257,778	$ 6,627	$ 276,411	$ 283,039	9.8%
25	C	1,560	47,450	$ 6,627	$ 155,474	$ 162,102	$ 6,627	$ 171,112	$ 177,739	9.6%
26	C	24,000	730,000	$ 26,507	$ 2,391,914	$ 2,418,421	$ 26,507	$ 2,632,490	$ 2,658,997	9.9%
27	C	14,400	438,000	$ 6,627	$ 1,435,148	$ 1,441,776	$ 6,627	$ 1,579,494	$ 1,586,121	10.0%
28	C	18,000	547,500	$ 13,254	$ 1,793,936	$ 1,807,189	$ 13,254	$ 1,974,368	$ 1,987,621	10.0%
29	C	2,160	65,700	$ 6,627	$ 215,272	$ 221,900	$ 6,627	$ 236,924	$ 243,552	9.8%
30	C	1,500	45,625	$ 6,627	$ 149,495	$ 156,122	$ 6,627	$ 164,531	$ 171,158	9.6%
31	C	8,280	251,850	$ 11,448	$ 712,959	$ 724,407	$ 11,445	$ 784,475	$ 795,920	9.9%
32	D	720	21,840	$ 6,627	$ 67,826	$ 74,454	$ 6,627	$ 74,579	$ 81,206	9.1%
33	D	1,981	59,996	$ 13,254	$ 186,515	$ 199,769	$ 13,254	$ 205,087	$ 218,341	9.3%
34	D	14,854	449,864	$ 34,460	$ 1,398,533	$ 1,432,993	$ 34,460	$ 1,537,792	$ 1,572,252	9.7%
		230,025	6,910,270	$ 343,595	$ 22,625,406	$ 22,969,000	$ 343,592	$ 24,902,653	$ 25,246,245	9.9%

SALES TO OTHER SYSTEMS - SCHEDULE G

Number	Rate	Demand	Usage	Current Fixed Revenue	Current Volumetric Revenue	Current Total Revenue	Proposed Fixed Revenue	Proposed Volumetric Revenue	Proposed Total Revenue	Increase
35	G		1,642,500	$ -	$ 4,857,530	$ 4,857,530	$ -	$ 5,426,492	$ 5,426,492	11.7%
36	G		1,085,952	$ -	$ 3,211,593	$ 3,211,593	$ -	$ 3,587,767	$ 3,587,767	11.7%
37	G		4,354,170	$ -	$ 12,877,022	$ 12,877,022	$ -	$ 14,385,307	$ 14,385,307	11.7%
38	G		1,350,500	$ -	$ 3,993,969	$ 3,993,969	$ -	$ 4,461,782	$ 4,461,782	11.7%
39	G		1,095,000	$ -	$ 2,796,959	$ 2,796,959	$ -	$ 3,123,707	$ 3,123,707	11.7%
			9,528,122	$ -	$ 27,737,073	$ 27,737,073	$ -	$ 30,985,054	$ 30,985,054	11.7%

PEAKING SERVICE - SCHEDULE H

Number	Rate	Demand	Usage	Current Fixed Revenue	Current Volumetric Revenue	Current Total Revenue	Proposed Fixed Revenue	Proposed Volumetric Revenue	Proposed Total Revenue	Increase
40	H		9,403	$ 21,207	$ 90,749	$ 111,955	$ 21,207	$ 106,071	$ 127,277	13.7%
41	H		-	$ 55,667	$ -	$ 55,667	$ 55,667	$ -	$ 55,667	0.0%
42	H		-	$ 21,207	$ -	$ 21,207	$ 21,207	$ -	$ 21,207	0.0%
43	H		-	$ 21,207	$ -	$ 21,207	$ 21,207	$ -	$ 21,207	0.0%
44	H		-	$ 21,207	$ -	$ 21,207	$ 21,207	$ -	$ 21,207	0.0%
			9,403	$ 140,493	$ 90,749	$ 231,242	$ 140,493	$ 106,071	$ 246,563	6.6%

BULK SERVICE - SCHEDULE I

Number	Rate	Demand	Usage	Current Fixed Revenue	Current Volumetric Revenue	Current Total Revenue	Proposed Fixed Revenue	Proposed Volumetric Revenue	Proposed Total Revenue	Increase
45	I		22,358	$ 13,254	$ 120,668	$ 133,922	$ 13,254	$ 142,188	$ 155,442	16.1%

OPTIONAL INDUSTRIAL WHOLESALE - SCHEDULE F

Number	Rate	Demand	Usage	Current Fixed Revenue	Current Volumetric Revenue	Current Total Revenue	Proposed Fixed Revenue	Proposed Volumetric Revenue	Proposed Total Revenue	Increase
46	OIW		200,750	$ 13,254	$ 863,044	$ 876,298	$ 13,254	$ 962,215	$ 975,469	11.3%
47	OIW		203,305	$ 541,452	$ 874,029	$ 1,415,481	$ 541,452	$ 974,461	$ 1,515,914	7.1%
48	OIW		525,088	$ 57,257	$ 2,257,407	$ 2,314,663	$ 57,257	$ 2,516,800	$ 2,574,057	11.2%
49	OIW		1,460,000	$ 304,441	$ 6,276,686	$ 6,581,127	$ 304,441	$ 6,997,926	$ 7,302,367	11.0%
50	OIW		251,850	$ 53,015	$ 1,082,728	$ 1,135,743	$ 53,015	$ 1,207,142	$ 1,260,157	11.0%
51	OIW		1,344,623	$ 45,788	$ 4,993,928	$ 5,039,716	$ 45,776	$ 5,566,334	$ 5,612,110	11.4%
			3,985,616	$ 1,015,207	$ 16,347,822	$ 17,363,029	$ 1,015,195	$ 18,224,878	$ 19,240,073	10.8%

MANASQUAN - SCHEDULE E J

Number	Rate	Non-Int. Usage	Interruptible Usage	Current Fixed Revenue	Current Volumetric Revenue	Current Total Revenue	Proposed Fixed Revenue	Proposed Volumetric Revenue	Proposed Total Revenue	Increase
52	E		1,600	$ 15,374	$ 96,255	$ 111,629	$ 15,374	$ 108,992	$ 124,367	11.4%
53	E		406	$ 28,497	$ 195,683	$ 224,180	$ 28,497	$ 223,890	$ 252,387	12.6%
54	E		7,655	$ 38,437	$ 423,672	$ 462,109	$ 38,437	$ 479,240	$ 517,677	12.0%
55	E		1,715	$ 20,544	$ 235,059	$ 255,603	$ 20,544	$ 267,945	$ 288,489	12.9%
56	E		22,757	$ 15,374	$ 234,476	$ 249,850	$ 15,374	$ 250,192	$ 265,566	6.3%
57	J		99,974	$ 20,146	$ -	$ 20,146	$ 20,146	$ -	$ 20,146	0.0%
		-	134,107	$ 138,372	$ 1,185,144	$ 1,323,516	$ 138,372	$ 1,330,259	$ 1,468,632	11.0%

New Jersey-American Water Company
Statewide Water Rates

Analysis is based on ACS Five-Year Survey data for 2019 unless noted otherwise
Monthly Bills are based on rates as proposed in WR2201XXXX
Customer Counts are September 30, 2021

Customer Estimated Median Household Income:	$	116,454
State Weighted Average Median Household Income:	$	89,584

Persons per Household	2.66	(calculated from national household size distributions by income level)
Persons per Household	2.75	(calculated from average household size by income level)
Persons per Household	2.47	(calculated from Table B25010 information average household size by income level)

Basic Water Service	40

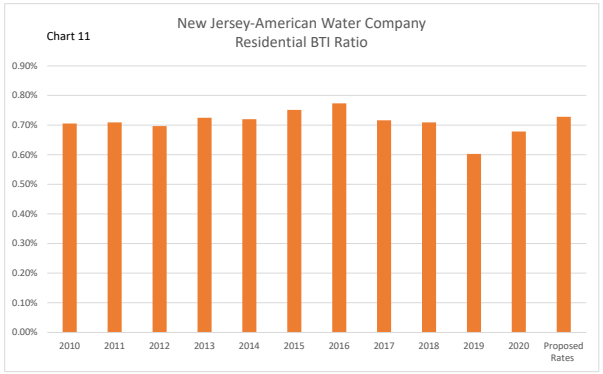
Income Level	Total	Owner Occupied	Renter Occupied		Average Income	Size	Basic Water Service		Monthly Bill	BTI Ratio	Average Multiple of FPL
0-5k	9,661	7,162	2,499	$	3,000	1.78	2,136	$	40.33	16.1%	20%
5-10k	7,012	4,460	2,551	$	7,500	1.72	2,064	$	39.71	6.4%	52%
10-15k	11,288	7,474	3,814	$	12,500	1.52	1,824	$	37.67	3.6%	90%
15-20k	13,856	9,665	4,191	$	17,500	1.68	2,016	$	39.30	2.7%	122%
20-25k	15,808	12,074	3,735	$	22,500	1.88	2,256	$	41.35	2.2%	151%
25-35k	32,286	24,949	7,337	$	30,000	2.10	2,520	$	43.60	1.7%	191%
35-50k	47,336	39,185	8,151	$	42,500	2.25	2,700	$	45.15	1.3%	262%
50-75k	82,956	71,841	11,115	$	62,500	2.50	3,000	$	47.71	0.9%	364%
75-100k	76,794	69,789	7,005	$	87,500	2.70	3,240	$	49.76	0.7%	483%
100-150k	128,061	120,942	7,119	$	125,000	3.00	3,600	$	52.83	0.5%	647%
> 150k	212,555	207,246	5,309	$	200,000	3.20	3,840	$	54.88	0.3%	988%
Total	637,614	574,788	62,826								

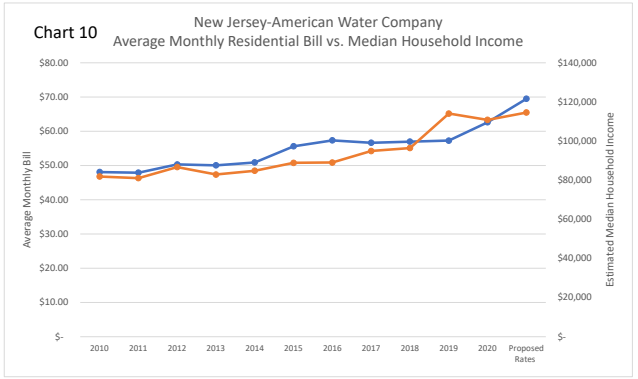
FPL Level	Total	Basic Water Service		Monthly Bill		Average Income	BTI Ratio
0% - 150%	60,741	2,763	$	45.68	$	16,862	3.25%
150% - 300%	95,609	3,334	$	50.55	$	47,199	1.29%
300% - 500%	111,566	3,677	$	53.48	$	86,347	0.74%
Over 500%	369,698	3,073	$	48.33	$	159,736	0.36%
	637,614		$	49.31			

Total Average Basic Service Bill:	$	49.31
Average Bill to Income Ratio:		0.51%

New Jersey-American Water Company
Affordability Analysis

Residential Statistics	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Proposed Rates	
NJ Revenue	$ 321,026,740	$ 320,030,742	$ 335,814,771	$ 331,763,076	$ 338,717,287	$ 373,520,552	$ 388,085,827	$ 391,289,917	$ 398,464,810	$ 405,582,508	$ 446,821,017		
NJ Sales	46,416,833	42,085,183	42,445,930	40,004,530	40,295,295	42,772,328	42,448,143	40,687,849	39,995,986	40,369,074	43,664,018		
NJ Customers	556,340	556,933	556,271	552,284	554,737	559,626	564,072	575,785	582,888	590,115	594,497		
NJ Median Income	$ 62,968	$ 62,338	$ 66,692	$ 63,754	$ 65,243	$ 68,357	$ 68,468	$ 72,997	$ 74,176	$ 87,726	$ 85,239	$ 88,162	
NJ Customer Median Income	$ 81,854	$ 81,035	$ 86,695	$ 82,876	$ 84,812	$ 88,860	$ 89,004	$ 94,891	$ 96,424	$ 114,038	$ 110,805	$ 114,605	1.2999 Difference between NJ Median Household Income and Median Household Income for NJAWC Customers
NJ Average Price	$ 6.92	$ 7.60	$ 7.91	$ 8.29	$ 8.41	$ 8.73	$ 9.14	$ 9.62	$ 9.96	$ 10.05	$ 10.23		
NJ Average Monthly Bill	$ 48.09	$ 47.89	$ 50.31	$ 50.06	$ 50.88	$ 55.62	$ 57.33	$ 56.63	$ 56.97	$ 57.27	$ 62.63	$ 69.51	
NJ Average Monthly Use	6.95	6.30	6.36	6.04	6.05	6.37	6.27	5.89	5.72	5.70	6.12		
NJ BTI Ratio	0.70%	0.71%	0.70%	0.72%	0.72%	0.75%	0.77%	0.72%	0.71%	0.60%	0.68%	0.73%	





New Jersey-American Water Company
Statewide Sewer Rates

Analysis is based on ACS Five-Year Survey data for 2019 unless noted otherwise
Monthly Bills are based on rates as proposed in WR2201XXXX
Customer Counts are September 30, 2021

Customer Estimated Median Household Income:	$	92,622
State Weighted Average Median Household Income:	$	89,584

Persons per Household	2.56	(calculated from national household size distributions by income level)
Persons per Household	2.65	(calculated from average household size by income level)
Persons per Household	3.04	(calculated from Table B25010 information average household size by income level)

Basic Water Service	40

Income Level	Total	Owner Occupied	Renter Occupied		Average Income	Size	Basic Water Service		Monthly Bill	BTI Ratio	Average Multiple of FPL
0-5k	823	585	238	$	3,000	1.78	2,136	$	39.91	16.0%	20%
5-10k	586	361	224	$	7,500	1.72	2,064	$	39.64	6.3%	52%
10-15k	1,231	808	423	$	12,500	1.52	1,824	$	38.19	3.7%	90%
15-20k	1,520	957	562	$	17,500	1.68	2,016	$	39.15	2.7%	122%
20-25k	1,430	904	526	$	22,500	1.88	2,256	$	38.68	2.1%	151%
25-35k	3,212	2,082	1,130	$	30,000	2.10	2,520	$	45.41	1.8%	191%
35-50k	4,753	3,472	1,281	$	42,500	2.25	2,700	$	48.05	1.4%	262%
50-75k	6,563	5,155	1,408	$	62,500	2.50	3,000	$	49.98	1.0%	364%
75-100k	5,542	4,915	627	$	87,500	2.70	3,240	$	56.49	0.8%	483%
100-150k	8,583	7,849	734	$	125,000	3.00	3,600	$	61.12	0.6%	647%
> 150k	11,646	11,197	449	$	200,000	3.20	3,840	$	64.24	0.4%	988%
Total	45,888	38,284	7,604								

FPL Level	Total	Basic Water Service		Monthly Bill		Average Income	BTI Ratio
0% - 150%	5,979	2,752	$	49.43	$	17,247	3.44%
150% - 300%	8,663	3,174	$	54.94	$	45,383	1.45%
300% - 500%	8,564	3,458	$	60.06	$	82,327	0.88%
Over 500%	22,683	2,967	$	53.79	$	153,210	0.42%
	45,888		$	54.61			

Total Average Basic Service Bill:	$	54.61
Average Bill to Income Ratio:		0.71%

New Jersey-American Water Company
Affordability Analysis

Residential Statistics	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Proposed Rates	
NJ Revenue	$ 321,026,740	$ 320,030,742	$ 335,814,771	$ 331,763,076	$ 338,717,287	$ 373,520,552	$ 388,085,827	$ 391,289,917	$ 398,464,810	$ 405,582,508	$ 446,821,017		
NJ Sales	46,416,833	42,085,183	42,445,930	40,004,530	40,295,295	42,772,328	42,448,143	40,687,849	39,995,986	40,369,074	43,664,018		
NJ Customers	556,340	556,933	556,271	552,284	554,737	559,626	564,072	575,785	582,888	590,115	594,497		
NJ Median Income	$ 62,968	$ 62,338	$ 66,692	$ 63,754	$ 65,243	$ 68,357	$ 68,468	$ 72,997	$ 74,176	$ 87,726	$ 85,239	$ 88,162	
NJ Customer Median Income	$ 65,103	$ 64,452	$ 68,953	$ 65,916	$ 67,455	$ 70,675	$ 70,790	$ 75,472	$ 76,691	$ 90,701	$ 88,129	$ 91,151	1.0339 Difference between NJ Median Household Income and Median Household Income for NJAWC Customers
NJ Average Price	$ 6.92	$ 7.60	$ 7.91	$ 8.29	$ 8.41	$ 8.73	$ 9.14	$ 9.62	$ 9.96	$ 10.05	$ 10.23		
NJ Average Monthly Bill	$ 48.09	$ 47.89	$ 50.31	$ 50.06	$ 50.88	$ 55.62	$ 57.33	$ 56.63	$ 56.97	$ 57.27	$ 62.63	$ 69.51	
NJ Average Monthly Use	6.95	6.30	6.36	6.04	6.05	6.37	6.27	5.89	5.72	5.70	6.12		
NJ BTI Ratio	0.89%	0.89%	0.88%	0.91%	0.91%	0.94%	0.97%	0.90%	0.89%	0.76%	0.85%	0.92%